

INTRODUCING THE JEEP CHEROKEE CLASSIC

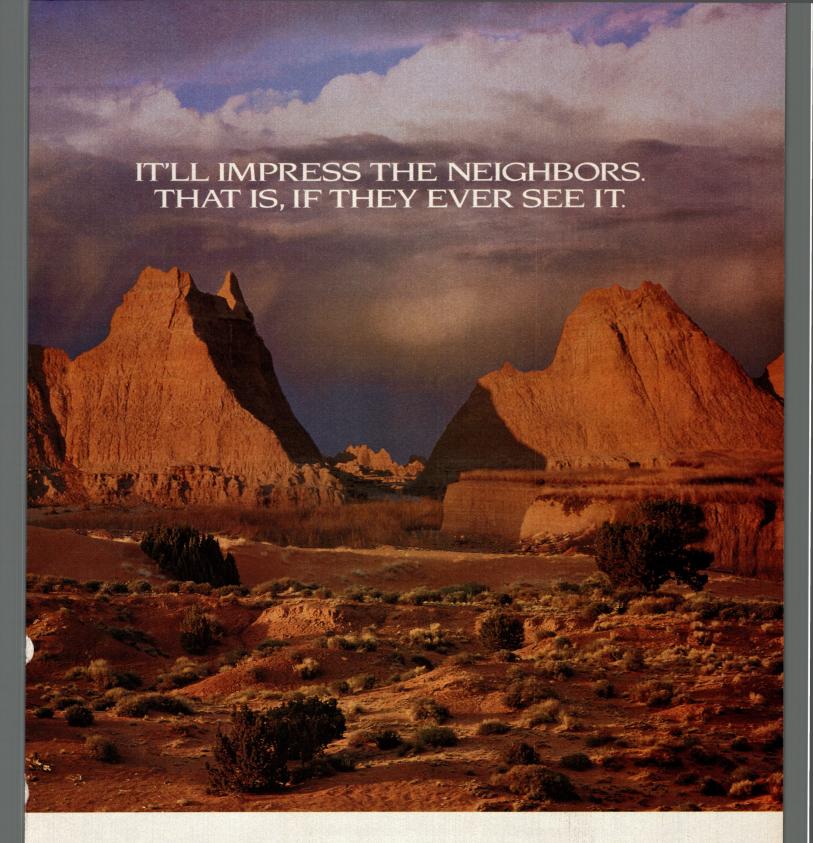
It will certainly be tempting to drive Cherokee Classic right off the dealer's lot to some remote mountaintop not found on any map.

This limited edition has that classic Cherokee silhouette and features body-color side cladding,

grille, wheel flares, and air dam. You'll also notice some serious 5-spoke alloy rims carrying some hefty all-terrain Goodyear® radial tires.

Those special features continue on the inside, and they're all standard. Air conditioning. Driver's air bag. A full floor console. Power steering. Roof rack. A rear-window wiper/washer. And a leather-wrapped tilt steering wheel, perfect for clutching

†Always wear your seat belt for a fully effective air bag. Jeep is a registered trademark of Chrysler Corporation. Goodyear is a registered trademark of



tightly on those tricky downhill descents.

Classic is available in two- or four-wheel drive, depending on your demeanor, and features your choice of a 5-speed manual or a 4-speed automatic, both transferring power from an equally legendary 190 horsepower I-6 engine.

If the neighbors eventually do get a glimpse of your Cherokee and if they ask you about the

options, tell them there are about a million to choose from: Monument Valley, the Grand Canyon, the Black Hills of South Dakota, Yosemite, the Rubicon Trail, etc., etc. ...

Jeep

THERE'S ONLY ONE

the Goodyear Tire & Rubber Company.







27 THE ULTIMATE DIVE You've got one day, one dive. Where are you going to spend it? Twelve experts give their answers.

46 HOT DATE Birds do it, bees do it, even polyps in the sea do it. An under-thecovers look at a mass coral spawning. ~By Marty Snyderman

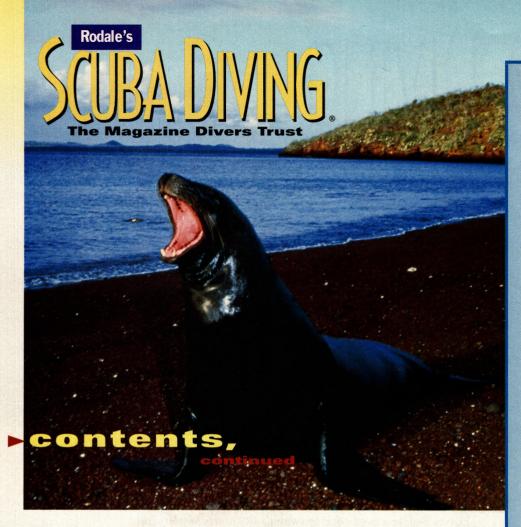
- 36 RSD TRAVEL GUIDE: BAY ISLANDS In these jungly islands just a heave-ho from Honduras's north
- INDONESIA'S BANDA SEA Diving this rich Spice Islands sea might not put you on the edge of the earth, but you'll be close enough to see it. ~Text & photography by Burt Jones and Maurine Shimlock
 - READER RATINGS: BELIZE AND THE VIRGIN ISLANDS Our readers have been there, dived that. Here's their report on the best islands, operators and live-aboards.
 - **WEEKENDERS** One-tank getaways in your backyard, by region:
 - - ► Midwest/South Central: Western Louisiana; Port Sanilac, Mich.
 - ► West: McAbee Beach, Calif.; Adams River, British Columbia

Equipment

- GEAR REVIEW: 17 SPECIALTY BCs Will today's weight-integrated and back-buoyancy BCs lift us to a new level of diving or sink under the weight of their design problems? ~By Jon Hardy
- **CAMERAS FOR BEGINNERS** Three underwater models for under \$200. ~By John Francis



On the Cover: Julie Thill, a PADI instructor from Truckee, Calif., dives Little St. James in St. John, USVIs. Photo by Steve Simonsen.



Diver's Handbook

- **21 DIVE SECRETS** The keys to good diving are as close as your power inflator. Here's how to use your BC to stay as safe as a bank vault and as neutral as Switzerland. ~By Jon Hardy
- **CHOOSING THE RIGHT LENS** From macro to mega, how to select the right tool for the job. ~By Franklin Viola
- **CURE DIVER HEADACHES** Sometimes diving can be a pain in the head. Here's why, and what you can do about it. ~By Samuel Shelanski, M.D.

Departments

- **BEHIND THE LINES** The Death of Evolution. ~By David Taylor
- **8 LETTERS** *RSD* turns the other cheek.
- **SEAVIEW** Drug lords invade the Galapagos Islands; RSD readers occupy Klein Bonaire. ~Edited by Keith Phillips
- **FAR HORIZON** Where in the dive world are you? Play our contest, win a dive trip for two.



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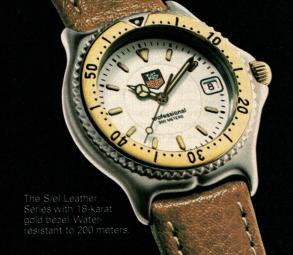




SUCCESS.

IT'S A

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BEHIND THE LINE

The Death of Evolution

Rip out this page! Then use it to save the Galapagos Islands. by **DAVID TAYLOR**

he Galapagos Islands, one of the richest marine environments in the world, are under attack from illegal fishing by Galapaguenos and industrial fishing

boats. Unless we act now to slow the rate of exploitation, the Galapagos marine environment could soon be decimated.

Following the collapse of coastal fisheries in Ecuador, a cash-strapped country with a burgeoning population, the Galapagos have become a seemingly limitless fountain of food and cash. Result: The hands-off mystique that once protected this 19-island archipelago-declared a World Heritage Site in 1978—has evaporated, replaced by a frenzied, sometimes lawless exploitation reminiscent of America's Wild West. Leaders of Ecuador's populist movement, representing the poverty-stricken masses, now view the Galapagos as a resource, like oil reserves or mineral deposits, theirs to exploit as needed.

We agree. But if the economic potential of the Galapagos is to be fully realized, we must convince Ecuadoran leaders that sharks and grouper are worth more alive as tourist attractions than grilled on a plate. Only if the integrity of the marine environment is preserved can it play a longterm role in Ecuador's economic struggle.

We are asking you to fax, mail or email the United Nations World Heritage Committee, the new Ecuadoran government, and an association of Galapagos tour operators. Our goal: To extend World Her-

Save The Galapagos

Please send your faxes, mail and e-mail to:

Ambassador Horst Winkelmann, Chairman **World Heritage Committee**

UNESCO 7 place de Fontenoy 7532 Paris 07 SP (fax) 011-33-1-4567-1690 e-mail: wh-info@unesco.org

Your letter will be distributed to all 21 members of the World Heritage Committee.

President Abdala Bucaram Ortiz, Republic of Ecuador Palacio de Gobierno

Garcia Moreno #1043 Quito, Ecuador (fax) 011-5932-580-735; 568-198; 228-301: 507-562

International Galapagos Tour **Operators Association** P.O. Box 915 Ithaca, NY 14851

itage status to include the marine reserve and have the entire area declared "in danger"-an official designation that, if accepted by Ecuador, could bring increased aid to enforce current fishing regulations and find a longterm strategy for balancing sustainable fishing with preservation.

The Galapagos remain a crucible-a place where two competing forces are locked in titanic

struggle, a conflict that is nothing less than a test of our species' ability to live on this planet without using it up. If we lose the Galapagos, the birthplace of the theory of evolution, if these islands become just another fished-out has-been, we must face the eventual possibility that this is also where evolution began to die. We cannot—we will not—let that happen.

SUGGESTED LETTER

Distinguished Members of the World Heritage **Committee/ Government of** the Republic of Ecuador/ Galapagos Tour Operators:

I urge the Republic of Ecuador and the World Heritage Committee to take action immediately to preserve one of the Earth's most important natural wonders—the Galapagos Islands.

These celebrated islands are threatened by the destructive overfishing currently practiced there. Only if

this productive natural area from becoming a wasteland that provides neither food. employment nor the enjoyment that earned the islands World Heritage Site status.

I ask the World Heritage Committee to extend the boundaries of the Galapagos Heritage Site to include the **Galapagos Marine Reserve and** to list the entire site as "in danger" under the terms of the World Heritage Convention. These are necessary first steps toward ensuring the long-term preservation of the islands.

I urge President Abdala we act now can we prevent Bucaram Ortiz and his govern-

ment to work with the international community to preserve the fragile balance of the islands and sea, thereby protecting sustainable fisheries and the lucrative ecotourism market so important to Ecuador.

With a combined effort. we can ensure that the Galapagos remains a productive natural wonder worthy of World Heritage Site status.

This letter may also be downloaded and e-mailed from our World Wide Web site (http://www.scubadiving.com) and our America Online area (keyword: RSD).

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Rodale's Scuba Diving (ISSN 1060-9563) is published monthly, except February, October and December by Rodale Press, Inc., 33 E. Minor St., Emmaus, PA 18098. Second-class postage paid at Emmaus, PA, and additional mailing offices. POSTMASTER: Send address changes at maning Onces. POSINVASTER: Sente address changes to Rodale's Scuba Diving magazine, P.O. Box 7589, Red Oak, IA 51591-0589. Subscription rate for 1 year (9 issues): United States, \$14.97; Canada, \$19.97 Canadian funds, includes GST #R122988611; all other foreign, \$24.97 U.S. funds prepaid.

In Canada, postage paid at Gateway, Mississauga, Ontario; Canada Post Corporation International Pub-lication Mail (Canadian Distribution) Sales Agreement No. 738867. Send returns to Scuba, 100 Armstrong Ave., Georgetown, Ontario L7G 5S4.

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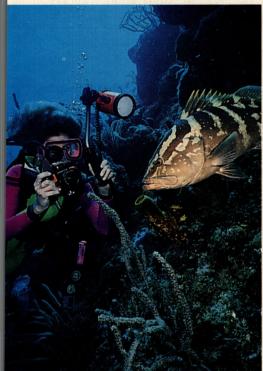
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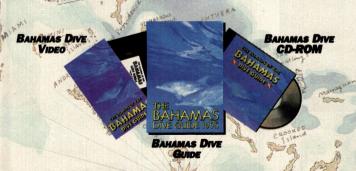


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	SPANISH CAY DIVING	809-365-0083
	WALKER'S CAY UNDERSEA ADVENTURES	800-327-8150
ANDROS	SMALL HOPE BAY LODGE	800-223-696
BIMINI	BIMINI UNDERSEA ADVENTURES	800-348-4644
CAT ISLAND	CAT ISLAND DIVE CENTER	809-342-3053
	FERNANDEZ BAY VILLAGE	800-940-1903
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	XANADU UNDERSEA ADVENTURES	800-327-8150
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	NASSAU SCUBA CENTRE	800-327-815
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	BOTTOM TIME ADVENTURES	800-234-846
	NEKTON DIVING CRUISES	800-899-675
	OUT ISLAND VOYAGES	800-241-459
	SEA DRAGON	305-522-016
	SEA FEVER DIVING CRUISES	800-443-383
	THE DREAM TEAM	800-741-533.

Photo Credit: Stephen Frink. @ 1996 Bahamas Ministry of Tourism/CLINE. RSD596

Ad Lib Redux

I am an experienced diver and co-director of a domestic violence treatment program. We work with men and women who have been convicted of battering their partners and/or their children.

I enjoy reading your magazine because it is very professional and informative. I was surprised and appalled to see the Ocean Corporation advertisement in the July issue. After my initial reaction of disgust, I remembered that in the past, RSD had surveyed its readers regarding sexual behavior toward female dive students by dive instructors. From that survey years ago (April '94, page 15), I had the impression that RSD had a raised consciousness and was concerned about how female divers were treated in the predominantly male sport.

The advertisement communicated that your staff doesn't consider the ad offensive or doesn't care how female subscribers interpret such ads. Are you aware that sexism in advertising is related to violence against women and children? Are you committed to stopping violence in this country? There is enough sexism in advertising without RSD participating in it.

VALERIE HANDLERS FULLERTON, CALIF.

Please add me to the long list of readers who find the Ocean Corporation advertisement ... let me see, what word am I looking for ... stubid!

I enjoy your publication, but in my opinion, it is no place for this type

> C. BARBEE SEATTLE, WASH.

I'm sure you will find plenty of young

Been Diving Lately

and get published in RSD!

e're accepting Weekender manuscripts from the most knowledgeable divers we know-our readers. We're looking for stories and photos (slides preferred) of your favorite close-to-home diving: the lakes, springs, rivers, quarries and seaside getaways you dive over a weekend with friends. If we use your story, you'll get a byline and \$100 for each complete package.

Know a spot in the U.S., Canada or northern Mexico that others might like to discover? Contact associate editor Keith Phillips at (912) 351-6234 for information on how to get started. Or e-mail to: RSDmgzn@aol.com.

(and old) males who will love this ad, but they will buy your magazine with or without this ad. You will also find many women (and some men) who are offended by this type of advertising, and they will stop buying your magazine if ads like this continue to appear.

> MARIE VERDERAME via e-mail

Scuba diving has a reputation as a tough sport, populated by Navy SEAL wannabes, men whose testosterone counts far exceed their IOs. I believed RSD was going to turn that reputation around, presenting scuba as the

balanced sport it actually is. What were you thinking when you accepted the ad from Ocean Corporation? It's soft-core porn. Get with it!

JOY OLGYAY PALO ALTO, CALIF.



Are you desperate for revenue? As an elementary school teacher, I loved taking your magazine to school to share. Now, my fourth-grade class will no longer enjoy your publication.

> JEANINE EDGINGTON REDONDO BEACH, CALIF.

Editor's note: Rodale's Scuba Diving does not accept advertising for hard alcohol or cigarettes, or ads that contain nudity. Beyond those broad guidelines, advertisers purchase space in our magazine and are free to use it as they see fit. While regrettably offensive to some, the ad for The Ocean Corporation fit within RSD's general standards and those practiced in mainstream American journalism.

Fin Tests

Did the manufacturers who chose to participate in your fin tests donate the fins to RSD or were they only loaned for testing (Fin Review, June '96)? If they were donated, where do the fins go after the tests? Are they given to training organizations or given to RSD employees as perks?

> TERRY MAY ENCINO, CALIF.

Editor's note: In 1996 alone, RSD's ScubaLab has tested more than 150 individual items of gear. Without the cooperation of manufacturers, who provide for testing the same pieces of gear they send to dive retailers, the cost of purchasing each item of equipment would limit our ability to conduct the industry's only objective, scientific evaluations of scuba gear. We return all gear to the manufacturers after testing.

Grand Illusion

So far, I've read Wes Skiles' riveting account of his sperm whale/pseudorca encounter three times, and it still makes my heart pound ("Grand Illusion," June '96). Not long ago, we used to laugh at the writing in diving magazines—written by people who were probably more eloquent under water than above. Wes has demonstrated an enviable range of talents, from the offhand free dive to 40 feet to wait for the whales, to a steady photographic hand in his striking portrait of the male pseudorca, to truly excellent storytelling. I hope we see more from Wes's log book in the future.

> TYLER YARBROUGH SAN LEANDRO, CALIF.

Diabetes and Diving

Thank you for the article on diabetes in the July issue of RSD ("Diving with Diabetes"). I hope it will help other people understand the problems of being a scuba diving diabetic.

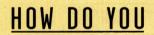
I am a 57-year-old man who has been a diabetic for over 20 years. While diving was something that was a challenge to my illness, it was absolutely no problem once I found how to work with the energy loss. It is really no different from taking long walks, swimming laps in the pool or any other form of exercise, if you always remember the Boy Scout motto, "Be prepared."

Diabetes is something that can never be cured and makes your life full of challenges. But these challenges make life interesting, and I hope they will never stop anyone from diving.

> MURRAY MARTIN via e-mail

Correction

Two equipment credits were inadvertently omitted from "16 Secrets of Saving Air" (July '96). Aquatic Wetsuits of Hallandale, Fla., donated a custom-designed and built skin. Force-E of South Florida provided fins, gloves and a wetsuit.



PREFER YOUR SHIP:

above water, or below?

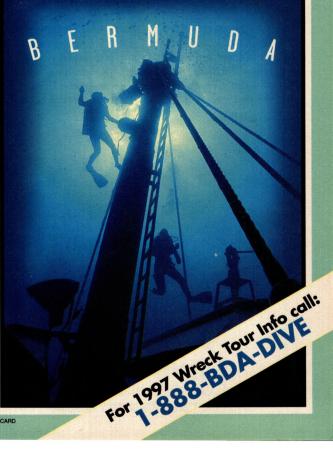
Float among emeralds in turquoise water. Swim with 650 species of fish, including mermaids on the bows of ships. See coral reefs 40 feet down, before you even dive. Call your travel agent or

1-800-821-1199. After all, bow many underwater treasures are this easy to find?

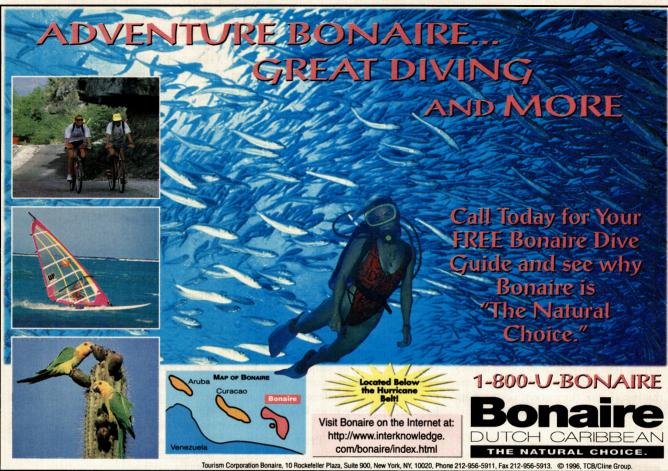
Let yourself GO"-



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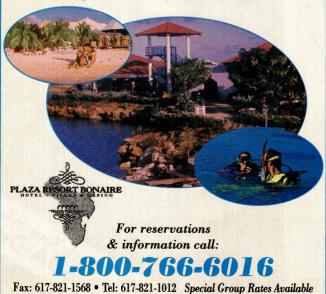
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eco-update

ENVIRONMENTAL EMERGENCY: GALAP

s reports of environmental carnage continue to filter out from the Galapagos Islands (see "Galapagone?" RSD, Aug. '96), an environmental arm of the United Nations seems poised to declare the region in a state of emergency.

OOUG PERRINE

The unique biodiversity of the islands, recognized by international treaty as a World Heritage Site in 1978, is under attack above and below water from rampant population growth and unrestrained fishing of everything from sea cucumbers to sharks. Conservationists say declaring the site "in danger" under terms of the treaty would bring international aid and pressure to bear on ecological problems. "It's analogous to declaring a state of environmental emergency-no different than if an area is imperiled by a flood or hurricane," says Jack Grove of Conservation Network International. But politics, national pride and social turmoil may hamper the effort.

"The designation simply provides a spotlight to help harness the global community," says Rob Milne, an advisor to the World Heritage Committee. "Unfortunately, some countries have viewed 'in danger' as some sort of

overt criticism, which it isn't."

An attempt by members of UNESCO's World Heritage Committee to declare the Galapagos "in danger" in 1995 met vehement opposition from the Ecuadoran government, which argued that it wasn't necessary despite a host of problems including armed takeovers by fishermen of the Charles Darwin Foundation Research Station (see "Seaview: Island Held Hostage, Again," RSD, Jan./Feb. '96).

In June, however, Ecuador invited a heritage team on a 10-day fact-finding mission to the Galapagos to evaluate its earlier request that world heritage status be extended to include the Galapagos Marine Reserve. Based on the team's findings, the 21-nation World Heritage Committee will decide on both issues when it meets in Merida, Mexico, in December.

Ironically, extending the bounds of the heritage site while simultaneously declaring it "in danger" is the recommended course of action from the World Conservation Union, an advisory group to the World Heritage Committee. Environmentalists say the combined actions would encourage Ecuador to enforce a 1992 law enacting a man-

agement and conservation plan for the marine park.

As a member of the committee, Ecuador could block either action. On Aug. 10, a new national governmentheaded by populist Abdala Bucaram Ortiz of the Roldosista Party-was set to take office. In a nation beset by poverty, the environment was not a campaign issue and Bucaram's environmental views were not clear. In May's congressional election, Eduardo Veliz, who led a violent takeover of the Galapagos park headquarters in 1994, was reelected to represent the islands.

Milne says the heritage committee will want to see proof of a commitment to protecting the Galapagos before extending heritage site designation to the marine park. The first signs of that effort came in June when raids by the Ecuadoran Navy and the Galapagos National Park Service seized 33,500 harvest-

ed sea cucumbers and 32 shark fins from illegal fishing camps on Fernandina and Isabela islands.

A month earlier, an international

drug raid nabbed 574 kilos of cocaine (estimated value: \$17.5 million) hidden in frozen "catch and release" sport fish awaiting export to Miami.

But as the new government of Ecuador faces staggering national debt and internal pressure to harvest the bounty of the Galapagos, the question remains: Will the country accept international aid and opt for long-term preservation? The answer could determine the fate of one of nature's greatest masterpieces.

-LANCE LEONHARDT

Mother Nature Needs You

please see "Behind the Lines," pg. 6, to join our international campaign to save the Galapagos. RSD is urging the World Heritage Committee to extend heritage site designation to the Galapagos Marine Reserve and to declare the area "in danger" as a first step toward enforcement of fishing regulations.

Emittee Electrime

INSIDE > BONAIRE UPDATE, PG.12

► WOMEN IN DIVING, PG.13

REEF BRIEFS, PG.14

SEPTEMBER/OCTOBER · II

hanks to all of you who joined the Preserve Klein Bonaire online petition (http://www.scubadiving.com /bonaire). As this issue went to press, the number of electronic signatures was climbing past 1,300. That doesn't include the letters and e-mail messages you sent in (see "Seaview: Save Klein Bonaire," RSD, May '96).

The first batch of your responses has already been forwarded to the Island Government of Bonaire, the Council of Underwater Resort Operators, the Bonaire Marine Park and the newly formed Foundation to Preserve Klein Bonaire.

A nonprofit group, The Foundation to Preserve Klein Bonaire was formed by Bonaire residents and dive operators in June. It is soliciting donations and hopes to raise enough money to help purchase Klein Bonaire and turn the satellite island into a nature preserve. At press time, a second group-Foundation to Purchase Antillean Nature—was also scheduled to be incorporated. Its goal is to raise private funds to preserve four different sites in the Netherlands Antilles that are of unique natural value-Klein Bonaire, the Oostpunt Reserve on Curação (see "Seaview: Reserve Opened to Development," Jan./Feb. '96), a forest tract on St. Maarten and a volcanic crater on St. Eustatius.

With the start of private fund-raising come tricky and unanswered questions about who should purchase land, how it should be managed and how to negotiate a fair purchase price for land without driving up the cost. The current owners of Klein

Bonaire and Oostpunt both plan to build on their property and may drive hard bargains.

Moderating their demands will be new planning and zoning regulations in the Netherlands Antilles that restrict development in sensitive areas-and in the case of Klein Bonaire, the additional expense of building on an island with no infrastructure.

"They have very valuable pieces of nature but there's nothing they can do with them. They can earn a lot of goodwill by selling at a fair price," predicts Nico Visser of the Netherlands Antilles Department of Health and Environment.

For more information or to make a donation, contact the Foundation to Preserve Klein Bonaire, P.O. Box 68, Kralendijk, Bonaire, Netherlands Antilles.



FAMILY FEUD

he dueling Cousteaus have agreed to settle a lawsuit over the family name, but father and son are still bristling like sea urchins.

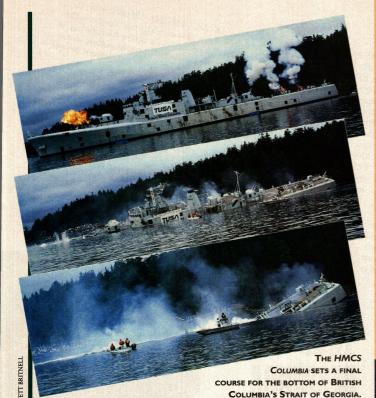
The two sides agreed to make permanent a federal judge's temporary ruling that ordered Jean-Michel to use his first name together with his last for the Jean-Michel Cousteau Fiji Islands Resort (see "Seaview: Cousteau vs. Cousteau," RSD, April '96). Jacques-Yves Cousteau and the Cousteau Society claimed use of the famous surname might imply they were involved with the eco-resort.

When the San Franciscobased judge signed off on the settlement, he also ordered both Cousteaus to meet with a mediator to settle a \$300,000 countersuit by Jean-Michel for severance pay from the Cousteau Society, says Jean-Michel's lawyer, Peter Harvey.

The meeting may not go swimmingly. Statements issued June II—Jacques Cousteau's 86th birthday—were as charged as electric eels. The Cousteau Society said the agreement would "protect the purity and integrity of the Cousteau name." Jean-Michel, 57, said he was "deeply hurt and offended" by 'spiteful" statement.

Under the judge's order, both father and son-who haven't spoken in more than two years-must be on hand for the mediation, but there's no guarantee they'll meet face-to-face. Still, Harvey says, there's a chance that mediation will resolve more than legal issues. "It is our hope, through this ironic channel, that perhaps a reconciliation will occur."

-KAREN SCHWARTZ



artificial reefs

PEACE DIVIDENDS

apitalizing on the flood of ex-military ships hitting the scrap steel market, savvy dive operators in three top vacation destinations are putting surplus vessels to use as artificial reefs.

In June, the Artificial Reef Society of British Columbia sent its third decommissioned Canadian destroyer, the HMCS Columbia, down in a blaze of glory. Her fore and aft guns thundered with pyrotechnic charges moments before main charges sent the ship down to a textbook landing off Campbell River. Divers will find the ship sitting upright with her mast peaking at 35 feet, bridge at 50 feet and main deck at 75 feet. The 366-footlong vessel was also prepared for penetration. In the spring or summer of 1997, a fourth destroyer, the HMCS Saskatchewan, is slated to be sunk near Nanaimo or Powell

Two other artificial reef projects—the 510-foot Spiegel Grove in Key Largo, Fla., and a 330-foot Russian destroyer in Cayman Brac-that had been scheduled for sinking in June were postponed until late this year. At press time, both ships were still being cleaned for use as artificial reefs.

The scheduled sinking of the Spiegel Grove was delayed until November to avoid the risks of hurricane season. In the meantime, the Keys Association of Dive Operators is continuing to sell raffle tickets to raise the \$200,000 needed for the project. Only 2,000 tickets at \$100 each will be sold. Each ticket is a chance to win a 21-foot Wahoo fishing boat complete with 200-horsepower Mercury engine and trailer. To buy a ticket, contact Ocean Divers (800-451-1113) or Capt. Slate's Atlantis Dive Center (800-331-DIVE).

wenty-five years after the

WOMEN AND SCUBA

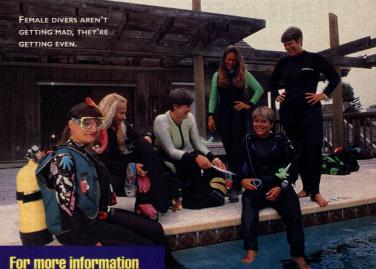
start of the women's movement, the scuba world is feeling its own feminist

At this year's diving trade shows, women gathered for the first frank discussions of why there aren't more of them in the industry and why so few women take up technical diving. The answers included a scarcity of female role models, intimidation by male instructors, and gear that just isn't made to fit the female form.

Nothing personal guys, but change is on the way:

► In September, two women instructors are hosting an all-female Instructor Development Course to get more look very hard to find a woman," says PADI Course **Director Barbara DeClerque of** Lake Worth, Fla., who, with instructor Lisa Mitchell, will teach the course Sept. 15-22 in Tortola, British Virgin Islands.

► The Florida-based Women's Scuba Association has successfully lobbied gear manufacturers to design new buoyancy compensators for women. Much of today's dive equipment is built on designs for male divers. On women, BCs do not fit properly and therefore degrade performance and decrease safety (see "BC Battle of the Sexes," RSD, Sept./Oct. '95). Foot pockets on fins are often too large and most masks don't fit slim faces.



on the all-women IDC, contact

Barbara DeClerque at (800) 325-9553.

To contact the WOMEN'S SCUBA ASSOCIATION, which also publishes a directory of female dive pros, call Jennifer King at (904) 426-5757 or e-mail: outdoor@america.com.

For information on the allfemale technical diving team, contact Velora Peacock at Billy Deans Key West Diver (800-87-DIVER or 305-294-7177).

women into leadership positions. According to PADI, the number of female divers has grown from 26 percent to 35 percent in 10 years, but only 17 percent of the training agency's instructors are women.

"I found it very disturbing every time I would go to an instructor exam, I would see a sea of faces, and I would have to

"In 1993 we discovered B what we called the Small and Pink Principle," says association President Jennifer King. "Guys would say, 'We're making it small and pink, what more do you want?' "WSA answered by setting up test panels and approaching manufacturers with suggestions. Today, at least three companies make BCs designed for women.

► Two leading technical divers plan to offer an all-female nitrox course and form a female technical dive team. Co-founder Velora Peacock, an open-water and nitrox instructor with Key West Diver, summed it up this way: "Sometimes women are so overwhelmed by being with all men, all the time, they'd like to have the experience of being with women so they can get their confidence and skill levels up." -CHRIS DUMMIT

RILLETINS

Sept. 12-15 NIKONOS SHOOTUS underwater photo competition in Key un

Largo, Fla. For Into.

(800) 272-9122.

Sept. 19-21 CHANNEL ISLANDS

Sept. 19-21 CHANNEL ISLANDS

UNDERWATER PHOTOGRAPHY/UDEO

WORKSHOP sponsored by the Channel Islands National Marine Sancturary

nel Islands National Marine Museum of and the Santa Barbara Museum of and the Santa Barbara Huseum of Natural History aboard the dive vessel Natural History aboard the dive vessel Vision. For more information, contact

Vision. For more information, contact the Sea Center at (805) 963-1067.

Sept. 21 INTERNATIONAL

CLEANUP DAY. The Center for Marine Conservation, PADI Project Aware and the Diving Equipment and Marketing Association are sponsoring

volunteer cleanup dives and beach sweeps coordinated by local organizers. For more information, contact the Center for Marine Conservation at (800) CMC-BEACH or Project Aware at (800) 739,7334, ext. 328.

at (800) 729-7234, ext. 328.
at (800) 729-7234, ext. 328.
Sept. 21 Archaeology
Research Diver Specialty
ShOp taught by David Cooper, Wisshop taught by David Cooper, wisconsin state underwater archaeologist, and Dr. Richard Boyd at Pearligist, and

(815) 389-1479.

Oct. 1 Entry deadline for the 23RD WORLD FESTIVAL OF UNDERWATER PICTURES in Antibes-Juan WATER Processes The show takes les Pins, France. The show takes place Oct. 30 to Nov. 3. For more information, call (011) 33-9361-18

4545 or fax (011) 33-9367-3493.

Oct. 4 MONTREAL INTERNATIONAL PHOTO CONTEST entry deadline.
For more information, leave a mes(613) 825-5328.

sage at (613) 825-5328.

Oct. 4-6 DISCOVER DIVING

EXPO at the Cobb Galleria Center in

Atlanta. For more information, con
Atlanta. For More information, TRASH-

tact (800) 776-3483.

Oct. 5 21ST ANNUAL TRASHFEST CLEANUP DIVE sponsored by
the Texas Gulf Coast Council of Diving Clubs on the Comal River in New
Braunfels, Texas. For more informacontact Gene or Sara Baugher
tion, contact Gene or Sara Baugher

at (713) 433-4761.

Oct. 17-20 NIKONOS SHOOTOUT underwater photo contest in
Monterey, Calif. For more information, call (800) 272-9122.

Oct. 19-20 MONTEREY DIVE
FEST sponsored by the Northern California Scuba Retailers Association at
fornia Noterey Convention Center. For
the Monterey Convention Center. Whitt
more information, call Edward White
(707) 584-2323.

at (707) 584-2323.

Oct. 20-25 EMERGENCY
Oct. PROGRAM sponsored
RESPONSE DIVER PROGRAM sponsored
by the USC Catalina Hyperbaric
Chamber. For more information, call
Chamber. For more information, call
Karl Huggins at (213) 743-2412; e-mail
huggins@mizgr.usc.edu.

If there's an event you would like included in Bulletins, send all relevant information at least three months in advance to: Bulletins, Rodale's Scuba Diving, 6600 Abercorn St., Suite 208, Savannah, GA 31405. Or e-mail us at RSDmgzn@aol.com.

REEF BRIEFS

Grand Cayman

Eco-Heroes



Humpty-Dumpty never had it so good. After a drifting cruise ship struck the popular Cheeseburger Reef off Grand Cayman, 140 local divernasters and instructors took to the water to reattach thousands of pieces of still-living coral.

During the three-month restoration effort, volunteers used a special epoxy to glue more than 4,000 pieces of coral—including 30 large coral heads—back together. "A lot of people rallied to the cause," says Peter Milburn, president of the Cayman Islands Watersports Operators Association. "At this point, we just have to wait and see if it's successful."

The reef was damaged Jan. 12 when a sudden squall caused the Holland American Lines ship Maasdam to drag anchor. The ship hit the reef about 15 times, says Walter Jaap, a St. Petersburg, Fla., scientist hired to oversee the \$500,000 restoration project funded by the cruise line. Based on the results of a similar project in Fort Lauderdale, Fla., Jaap says he is optimistic that the Cayman restoration will be a success.

—KAREN SCHWARTZ

► Tortola, BVIs

Scuba Crime

An instructor in the British Virgin Islands employee ever

is the first dive industry employee ever convicted of taking artifacts from the 129-year-old wreck of the RMS Rhone.

Tortola resident Michael Kent, 29, was arrested in March after a tipster led police to Kent's house, where they found more than 30 artifacts, including a silver coat hook, a brass oil lamp and a doorknob. At his June 19 trial, Kent pleaded guilty to a charge of

removing artifacts from a protected marine area and was fined \$500. His employer, Underwater Safaris, forced him to resign after his arrest.

The steam-powered Rhone sank midway between Peter Island and Salt Island during a hurricane in 1867. Designated as a national park in 1980, the wreck is the most popular dive site in the British Virgin Islands.

—KAREN S

scuba travel

1997 BERMUDA WRECK TOUR

reck divers and archaeology buffs, mark your calenders for a unique opportunity to explore the maritime heritage of Bermuda.

The 1997 Bermuda Wreck Tour, sponsored by Rodale's Scuba Diving, the Bermuda Department of Tourism and three Bermuda dive operators, takes place April 25-27. Complete vacation packages, including airfare, discount accommodations and special rates on diving some of Bermuda's 350 shipwrecks with co-sponsors Blue Water Divers, Fantasea Diving and Southside Scuba are avail-

able to RSD readers.

The package includes a rare behind-the-scenes tour of the Bermuda Maritime Museum to watch the painstaking work of preserving history. Participants will also tour the Bermuda Aquarium, Museum and Zoo, including a look at the inner workings of the aquarium and its new 145,000-gallon North Rock exhibit. A finale party at the main aquarium, featuring a slide show by curator Wolfgang E. Sterrer, wraps up a weekend of wrecks and wildlife.

For rates and more information, call 1-888-BDA-DIVE.

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Wild Things

Tucked in a corner of the western Caribbean are the incredible Bay Islands of Honduras – emerald islands rising from a turquoise sea. Just offshore are stunning coral gar-



dens and a continuous range of undersea mountains. Here divers will find an amazing display of marine life, more than 60 species of stony corals and the widest selection of sponges imaginable.

And there is more to marvel on the Honduras mainland. Imagine a country that can offer you an ancient Maya city like Copan, charming colonial architecture, a sprawling

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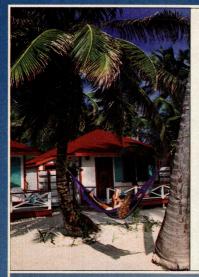


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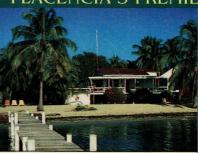
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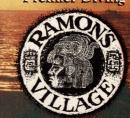
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Western Louisiana

The good times roll right past the Crescent City and into western Louisiana, where bayou divers enjoy their own field of oil rigs.

BY CLAY COLEMAN

laces are often defined by their most celebrated parts, and there's no escaping the fact that, for most, Louisiana diving means the oil rigs off New Orleans.

But west of the Crescent City—off the shore of Gulf coast communities such as New Iberia and Pecan Island—are the rigs of the Vermilion and East Cameron oil blocks, which are virtually untouched by divers.

Some 300 rigs and platforms are scattered across these subsea oil and gas fields, sheltering a prolific array of marine life in their monstrous, Tinkertoy frames. One difference between the western oil rigs and their brothers to the east is depth. The large platform in Vermilion Block 161, for example, sits 40 miles off the coast, but the water is only 90 feet deep.

For rig divers, exploring 161 is like visiting an old friend. Its large crane makes it a highly visible and easily recognizable starting point for a day of diving and it's located at the center of 10 randomly scattered platforms within a five-mile radius.

While a surface layer of brackish water caused by runoff from the Atchafalaya basin is typically present in winter, don't be fooled. Visibility under this layer is usually 50 to 100 feet and there's seldom any current below 20 feet. In late summer, this layer often dissipates completely, producing 100-foot visibility from surface to seafloor.

A dive beneath the structure starts with a surface swim to the interior of the rig. Upon descending, divers first notice the moody quality of the light beneath the rig and the always-present school of spadefish gently stemming the current. Sheepshead and delicious mangrove snapper often mingle with this school, as do chub and blue runner.

Grand Lake

White Lake

PECAN ISLAND

Gulf of Mexico

Vermilion Block 161

The first crossbeams of the rigs are at 30 feet and coated with a thick layer of barnacles and white gorgonians. Macro photographers often loiter here to concentrate on the blennies and juvenile tropicals holed up among the barnacles.

Picturesque schools of lookdowns and moonfish often swirl about the rig in a graceful ballet and it's not uncommon to encounter ocean triggerfish, amberjack and cobia ranging in size

from 10 to 60 pounds.

But the fish that's most in demand among spearfishermen is the tasty red snapper. Found from 50 feet to the bottom of

the Gulf, red snapper in the 20-pound range are common on western Louisiana rigs, and the shallow sea and hard bottom help make the spearfishing safe and productive.

RSD reader Clay Coleman lives in Baton Rouge, La.

DIVE IN

The lack of an established dive infrastructure along the western coast of Louisiana is both a blessing and a curse. Reliable bookings to the area can be made through **Diver's Destination** in Lafayette (318-984-4678) which runs a boat out of New Iberia. Inexpensive lodging is available near the marina.

Two Baton Rouge dive shops—Seven Seas (504-926-4036) and Underwater Adventures (504-927-3483)—can also arrange charters through independent boats. These trips typically depart from Pecan Island but the nearest available lodging is in the town of Kaplan, about 15 miles away. Accommodations are also available in Lake Charles, New Iberia and Lafayette. Trips to western Louisiana rigs require a full day at sea for a three-tank trip. Divers must bring all their own equipment (including tanks and weights), food and drinks.



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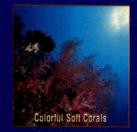
















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ORCLE NO. 87 ON READER SERVICE CARD



Sanilac Shores Preserve, Mich.

From Flint, Saginaw, Detroit and beyond, divers are drawn to one of the Great Lakes State's best underwater museums.

BY NICK LENZI

conventional museum,

Michigan's Sanilac Shores Bottomland Preserve houses a unique exhibit of Great Lakes shipwrecks.

Within the boundaries of this Lake Huron sanctuary are the remains of more than a dozen wrecks, all beautifully preserved in the cold, fresh water. One of the preserve's wreck sites, the

Sport, is so popular that the Eliza H. Strong state of Michigan has honored it with an underwater marker explaining the historical significance of the ship. Built in 1873, the tug provided nearly a half-century of service before her final voyage in December 1920. Sitting upright in less than 50 feet of water with all but her cabin intact, the *Sport* is believed to be one of the nation's

first steel-hulled vessels.

The Regina, a recently discovered wreck, sank in a violent storm in November 1913. Considered to be one of the preserve's better wreck dives, the 250-foot freighter rests upside down in about 80 feet of water, with a 50-foot hole opening her port side and cargo holds to divers. Artifact collecting, however, is illegal in the preserve, so leave your goody bag at home. Also lost that November was the Charles S. Price, a 504-foot steel-hulled freighter that some speculate may have collided with the Regina. Both wrecks offer penetration opportunities for properly trained and equipped divers.

Eight other wrecks dot

nhindered by the dusty the preserve, including the Eliza H. Strong, the F.B. Gardner, the Charles A. shelves and glass cases of a Street, the Mary Alice B., the Queen City, the Col. A.B. Williams, the Checotah and the New York. Excluding the Checotah and the New York, which

> lie in 120 feet of water, these wrecks are relatively shallow and easily accessible by novice and intermediate divers.

Divers should be aware that Sanilac Preserve wreck sites do not surrender their secrets easily. Lake Huron's dive season runs from Memorial Day through late October and, even though it may be 70F on the surface, you can count on water temperatures being considerably colder at depth. Dry suits or heavy wetsuits are recommended. Visibility of five feet is common though it occasionally peaks at 25 feet. Water clarity disappears quickly if the fine bottom sediment is disturbed.

But the rewards are well worth the effort. The cold, fresh water of Lake Huron keeps wrecks in a pristine state of preservation even

after nearly a century of exposure. And by wrapping these wrecks in the legal protection of a state preserve, Michigan will always offer great wreck diving.

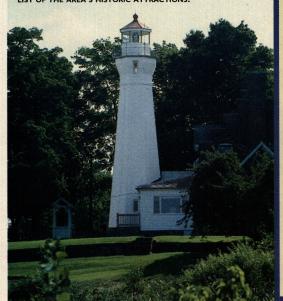
Freelance writer Nick Lenzi lives in Fenton, Mich.

THE CENTURY-OLD PORT SANILAC LIGHTHOUSE TOPS THE LIST OF THE AREA'S HISTORIC ATTRACTIONS.

Lake Huron

RT SANII AC

Regina 🔀

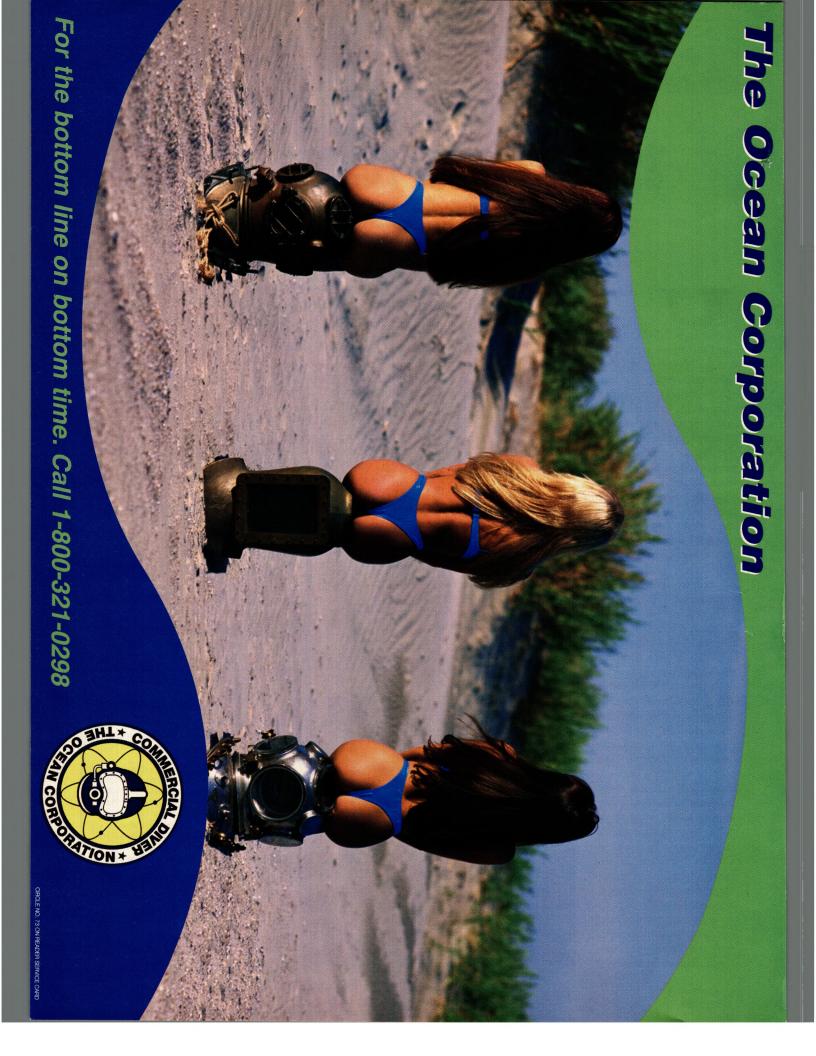


Established in 1986, the 160-square-mile Sanilac Shores Preserve is the ninth in Michigan's growing family of underwater parks. Removal or disturbance of portable artifacts is a felony punishable by stiff fines, jail terms and confiscation of cars, boats and dive gear. To report theft of artifacts, call the Michigan Department of Natural Resources at (800) 292-7800 (in Michigan).

Conveniently located for most Michiganders, Sanilac Shores Bottomland Preserve stretches from Lexington to White Rock and is centered on the town of Port Sanilac, two-and-a-half hours north of Detroit and 90 miles east of Flint. From Detroit, take I-94 to Port Huron and M-25 north to Port Sanilac. From Flint, take I-69 to Port Huron and M-25 north. From Saginaw, take M-46 to Port Sanilac.

Local dive shops that run charters in the preserve include Lakeshore Charters and Marine Exploration (810-359-8660) in Lexington and Fathoms Diving (810-622-DIVE) in Port Sanilac. Many Detroit and Flint area dive shops also arrange charters. They include: Bruno's Dive Shop (810-792-2040) in Clinton Twp., Macomb Scuba Center (810-558-9922) in Warren, Sea-Side Dive Shop Inc. (810-227-2077) in St. Clair Shores, The Dive Shop (810-732-3900) in Flint and All Seasons Diving Co. (810-796-2357) in Dryden.

For information on topside diversions, accommodations and the state's underwater preserves, call the Michigan Travel Bureau at (800) 543-2937.



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SEAWEED DIVERS NEW ALBANY IN 812-949-8060

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Cheap Shots

Underwater cameras for under \$200. ~ by John Francis

t one time or another, most of us want to be underwater photographers. My dive buddy Ralph jumped in with two heavy feet and popped for a full Nikonos system. Unfortunately, he can barely screw a hose onto a faucet, so assembling the rig was always a trial. He's not even a dry-land photographer, so the f-stop concept remained a mystery. I haven't seen the Nikonos on our last few dives.

I went the other direction, with a series of splash-proof disposables. They're also idiot-proof and take pretty good pictures, but I pushed the 15-foot barrier too many times with the predictable result. What we both needed, clearly, was a starter camera system that would be simple to use yet functional to reasonable depths and adequate for vacation snapshots.

Now there are three. The Aquashot II from Ikelite has been joined this year by two camera/housing combos, the ReefMaster from SeaLife and the Snapper from Bonica. All three take pictures down to 125 feet or more with point-and-shoot simplicity and cost less than \$200.



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UPSIDE▶ Accessories give versatility. Easy open/close case. Disposable camera. Best pictures.

DOWNSIDE Limited film choice. Manual film advance.

Aquashot II

Ikelite's Aquashot II was the first of these inexpensive housing/camera combinations and in some ways is still the best. It uses disposable cameras: the Fuji Quicksnap, the Kodak Fun-Saver or Ikelite's own Aqua Snap. These cameras all come with 27 exposures of ISO 400 print film and a built-in flash.

The housing is heavy plastic with a glass lens port and a rubber O-ring. It is the most complex of the three, with about 10 moving parts, three ports and three controls that pierce the housing. Though the relative complexity of the Aquashot II may cause some concern, the housing appears well-designed and well-made, and has a proven track record.

What sets the Aquashot apart is its set of close-up accessories. Before you've burned one roll of film with any of these

cameras, you discover you want to get closer to the subject than the four feet or so that their fixed-focus lenses allow. When you finally find that rainbow nudibranch, you'll want to fill the frame with him; at four feet, he looks like a red speck. But Ikelite's water-correcting lens brings the focus as close as two feet, and a macro lens, flash diffuser and framer let you get as close as eight inches. You may find yourself using these accessories all the time. A lightweight slaved strobe is another useful accessory, helping you eliminate backscatter and warm up colors in midrange photos.

But surely all this capability is wasted on a cheap throwaway camera? I compared the Fuji Quicksnap with the Snapper and ReefMaster cameras loaded with Fuji film, shooting

HOTOGRAPHY BY STEVE ES





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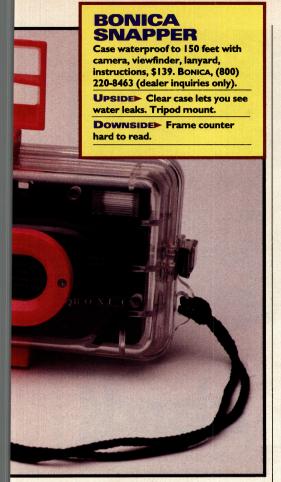


dozens of identical pictures both under water and on land, and the results were surprising. Though all the pictures were fairly sharp, those taken with the disposable were noticeably sharper, even though it used faster and presumably grainier ISO 400 film—probably because the fast film allows the disposable to use a tiny aperture, which minimizes faults in the lens.

Bonica Snapper

The Bonica Snapper is a housing and reusable camera that can be loaded with your choice of print or slide films. Made in China, the camera has automatic film advance and a built-in flash, but is otherwise like the disposables with fixed shutter and fixed aperture (f/3.8). It's designed for ISO 200 film but can use ISO 100 or 400 with a little help from the lab. A slide switch uncovers the lens and powers up the flash. Then it's strictly point and shoot. You house the camera turned on, but after a minute or so it turns itself off to conserve the batteries. Depressing the shutter release halfway powers up the flash in a couple of seconds.

The plastic housing is the lightest and simplest of these three camera systems. The front half is clear, allowing you



to detect a leak before it does catastrophic damage to the camera.

A threaded tripod mount on the bottom suggests the capability to add accessories like the Aquashot's; though promised for next year, none are available yet.

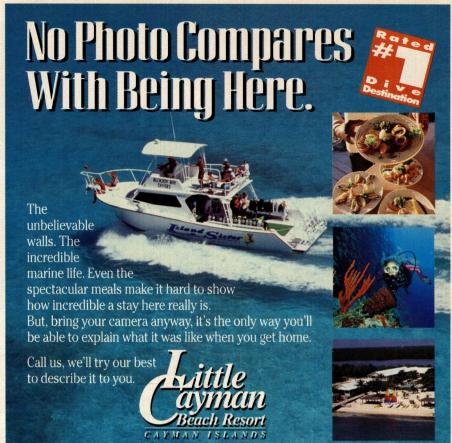
The Snapper is marginally easier to use than the Aquashot because you don't need to wind film, though you do need to remember to depress the shutter halfway and wait for the flash to power up, so maybe that's a wash.

SeaLife ReefMaster

The ReefMaster camera, also made in China, is cosmetically different from the Snapper but functionally almost identical. Pictures taken by the two were indistinguishable.

The housing, though, is improved. It is armored with rubber, so dropping the housing on the boat deck probably won't crack it. The shutter release has a safety to prevent accidental "pictures." And the lens port is threaded on the outside for a standard close-up lens, though with no framer, getting the focus right will require practice. As with the Snapper, accessories are planned for next year.

The ReefMaster comes with a spare O-ring, a cleaning cloth, O-ring cleaning swabs and lubricant, three packets of



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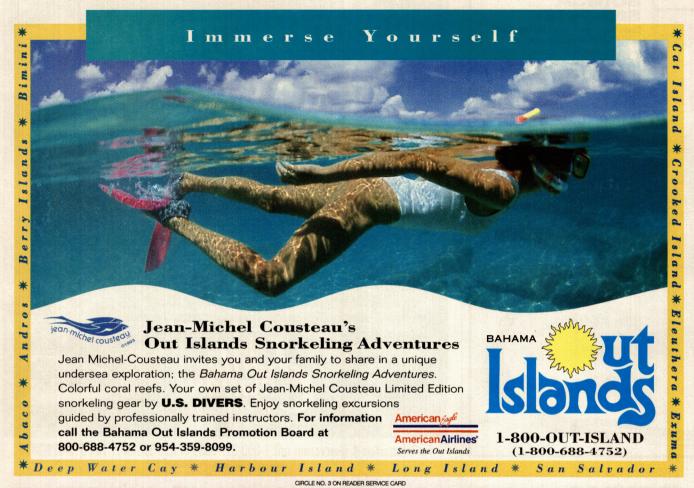
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DOWNSIDE Housing snaps hard to operate. Viewfinder wiggles.

"Moisture Muncher" silica gel, and a 40page instruction booklet with lots of advice for the novice photographer. All of it is foam-padded in a Pelican case (worth \$50 by itself) for a price of about \$199. If a waterproof case for a waterproof housing seems like overkill, use the case for something else.

What If It Leaks?

Sooner or later, all O-rings fail, which is why SeaLife recommends you replace theirs every year (and provides a spare). If you flood these housings, you will almost certainly kill the cameras.

In the event of a flood, here's the advantage of the Ikelite approach: You've only lost a \$10 disposable camera. Bonica and SeaLife will replace their camera—for \$80 and \$95, respectively—but there's always the risk that the camera will become unavailable. It's unlikely any other cameras will fit the housings.

On the other hand, there's also the risk that the specific Fuji and Kodak disposable cameras that fit the Aquashot housing will become unavailable. They've changed design in the past. That's why Ikelite now markets its own disposable, so you can always buy a camera to fit the housing. Even if your local dive shop doesn't stock these Aqua Snap cameras, presumably Ikelite will ship a six-pack or whatever. But don't expect to find them in the drugstore.

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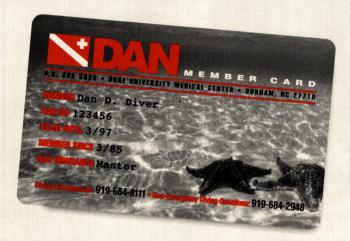
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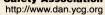
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* Availible through \$35 DAN Master Plan. Other insurance options are available. AD&D: accidental death and dismemberment; P&TD: permanent and total disability.

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Divers Alert Network Your Dive Safety Association





Which Is Best?

The Aquashot II is my pick, mostly because its accessories let you do so much more. By the time you're ready for a Nikonos system, you'll know what to do with it. (You can probably buy Ralph's real cheap.)

Field editor John Francis lives on a boat in Ventura, Calif.

BRIFFLY NOTED: 9 CD-ROMS

or those dry times between dives, boot up and take these nine oceanoriented CDs for a spin:

MAN IN THE SEA, on submersibles, undersea habitats and exploration. 80 minutes of video, 800 photos and drawings, 1,000 pages of text. For Windows, from Astral Communications, (416) 956-2000.

TROPICAL PACIFIC INVERTE-**BRATES**, 300-page full-color field guide with 17 video clips. For Windows, Macintosh, DOS and UNIX, from Coral Reef Press, (800) 200-7432.

SHARKS! AN INTERACTIVE JOUR-NEY, with 30 minutes of video, 200 photos, articles, and Peter Benchley interview. For Windows and Macintosh, from Discovery Channel CD-ROM, (800) 762-2189.

OCEANLIFE VOLUME V: THE CARIBBEAN, with video, stills, narration, etc. on 200 species of Caribbean fish. For Windows and Macintosh, from Sumeria, (415) 904-0800.

UNDERSEA ADVENTURES, with an introduction written by Jacques Cousteau for the Random House Atlas of the Sea, from Arctic killer whales to the Great Barrier Reef. For Windows or DOS, from Knowledge Adventure, Inc., (818) 542-4200.

THE WORLD OF WHALES AND **DOLPHINS** has over 120 photos, video, interactive text, etc. For Windows or DOS 5.0, from Sea-D Publishing, (809) 949-8327

S.T.O.R.M. is an interactive game: aquanauts of the future penetrate ocean depths to investigate mysterious explosion, save planet, etc. For DOS, from American Softworks Corp., (800) 474-7595 or (203) 327-3366.

FISH WITH NAMES LIKE is an interactive field guide and mnemonic tool whereby a trumpet morphs into a trumpetfish, a jackknife into a jackknifefish, etc. For Windows or Macintosh, from P&B Productions, (407) 723-9312. CITIES UNDER THE SEA—CORAL REEF is volume I in a series called "Jean-Michel Cousteau's World." A virtual submarine takes you through narrated video, photos, graphics, text and two games. For Windows and Macintosh, from Enteractive Inc., (800) 433-

4464 or (212) 221-6559.

"OH, YOU WORK FOR SCUBA DIVING magazine? Say, where's the best diving in the world?"

Having been asked the question many times over the years, I've honed a thought-provoking reply: "Huh?" The thought I mean to provoke is that it's a waste of time asking me, because I can't give a single, finger-on-the-map answer.

But it's a fascinating question. Skiers argue

which is the world's best run, golfers want to play the world's best course, climbers yearn for the highest mountain. Whatever our favorite sport, we naturally dream about the perfect day, the ultimate experience, the best.

So let's ask divers who have been everywhere and seen it all, the people with years of bottom time and dive logs as fat as phone books. At the top of the list are professional Four oceans, 13 seas, a million dive sites. Where is Tho

onal

by JOHN FRANCIS

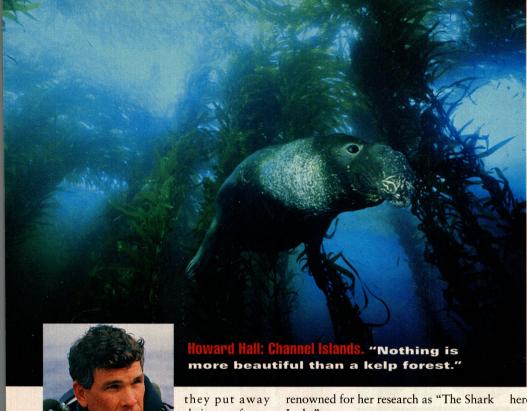
underwater photographers, who probably dive more places more often than anyone. Some of the dive travel specialists come in a close second, as do a few journalists and scientists.

We'll pose the question this way: Suppose Jack and Jill Diver have only one more day of diving to last them the rest of their lives before Flip Nicklin: Baffin Island, Canada.

"Big belugas, narwhals, bowhead whales things very few people get to see."

EPTEMBER/OCTOBER · 2

FLIP NICKLIN / MINDEN PICTURES



their gear forever. Suppose that last day of diving can be anywhere in the world, and King Neptune promises perfect conditions.

Where should Jack and Jill go for the ultimate dive?

Howard Hall

Lives ► Del Mar, Calif. Years Diving ► 30

Can Talk Because He's ► A full-time underwater photographer for

National Geographic, filmmaker for the PBS series "Nature" and "National Geographic Specials."

"If given perfect conditions, I'd definitely pick the California Channel Islands. Unlike the Caribbean, which is all essentially the same habitat, the Channel Islands habitat changes from island to island and even from one part of an island to another. Nothing is more beautiful than a kelp forest on a good day with good visibility."

Dr. Eugenie Clark

Lives ► College Park, Md.

Years Diving ▶ 47 Can Talk Because She's

Professor Emerita of Zoology, University of Maryland, has 71 dives in submersibles to 12,000 feet, worldLadv."

"I used to say Ras Mohammed at the southern tip of the Sinai Peninsula, but that has become very crowded with tourism. Now, I'd say, for a dive site that's very gorgeous and off-the-beaten track, Milne Bay in Papua New Guinea. The sheer beauty there, as well as the number of species of fish, is wonderful. It's richer than the Red Sea, certainly richer than the Caribbean. There are lots of virgin reefs, every tropical coral and sand fish imaginable, including some new species. We're doing some deep-water research there, but for the average sport diver the shallower

Stephen Frink

Lives ► Key Largo, Fla. Years Diving ▶ 25

Can Talk Because He's

Perhaps diving's most-widely published underwater photographer, longtime contributor to Skin Diver magazine.

"The Aida II was a troop transport which sank off The Brothers in the Red Sea in 1957. Clouds of opal sweepers now adorn the bow section, and giant clusters of soft corals cloak the lifeboat davits and superstructure. There is a terrific wide-angle photo op with clownfish and anemones in the middle of the deck at 109 feet and lionfish cruise the deck at this depth as well. The area is often swept by current, and pelagic life is common. I've seen great hammerheads and turtles

here. For marine life, the soft corals that now decorate the ship and the fascination inherent in wreck diving, the Aida II is my all-time favorite."

Bill Curtsinger

Antarctica is a lot

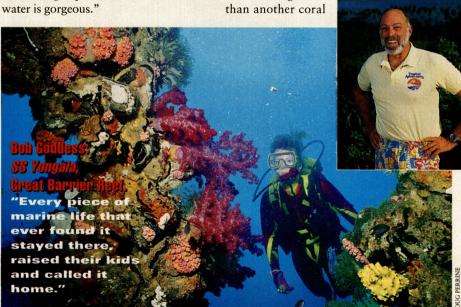
more exciting to me

Lives ► Yarmouth, Maine

Years Diving ▶ 28 Can Talk Because He's

Traveled as a National Geographic underwater photographer since 1973.

"They should go to McMurdo Sound, Antarctica. I have personally measured 1,000 feet of lateral visibility there. Diving





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WENTON 12

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DIVE VACATION PLANNING



reef, because it's a place where most people haven't been and won't go. There's an interesting bottom community there, large sponges and colorful invertebrates—hydroids, stars, sea urchins, anemones, etc.—and the water column has lots of interesting zooplankton. Diving under the ice is something else. There's an eerie quality to the light, it's diminished, translucent, has a blue cast—it's just otherworldly."

Carl Roessler

Lives ► San Francisco, Calif.

Years Diving ▶ 39

Can Talk Because He's An underwater photographer with 250,000 images, author of seven books on diving and photography, president of See & Sea Travel.

"There are at least a dozen places that can be the world's best diving on a given day. diving, I would say diving with the great white sharks off **South Australia**. The great white is the most beautiful, lethal, powerful, majestic animal in the sea, and when he's two inches from your nose he's impressive. You can dive with humpback whales and so on, but the difference is teeth. Big teeth."

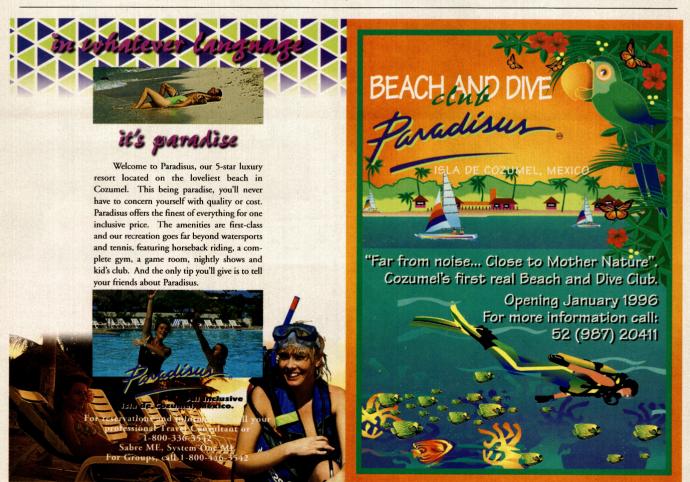
Bob Goddess

Lives > Seattle, Wash.

Years Diving ► 23

Can Talk Because He's Got 3,000+ dives in 26 countries, founder and president of Tropical Adventures Travel.

"If marine life is the primary goal, my choice would have to be the **SS Yongala** wreck on the **Great Barrier Reef.** You are guaranteed more marine life there on one dive than you'll ever see



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anywhere else in your life—mantas, stingrays, 600-pound grouper and potato cod, sea snakes, all kinds of fish. The wreck is isolated, with nothing but sand for 20 miles around it, so every piece of marine life that ever found it stayed there, raised their kids and called it home."

Neal Watson

Lives ► Fort Lauderdale, Fla.

Years Diving ► 39

Can Talk Because He's

Logged thousands of dives in all oceans, including the *Guinness Book of Records* deepest dive on air (437 feet) and longest dive without surfacing (66 miles). President of Neal Watson's Undersea Adventures.

"One of the highlights of my diving experience would have to be the **Walker's Cay shark dive** in the **Bahamas**. They've never been hand-fed, so they pay no attention to divers. You can swim right through 150 to 200 blacktip sharks as they feed on chum."

Bret Gilliam

Lives Bath, Maine Years Diving 38

Can Talk Because He's

A contributing editor and photographer

to seven underwater

to seven underwater magazines, CEO of UWATEC USA, president of Technical Diving International, vice chairman of NAUI.

"Blue Corner, off the western shore of Ngemelis, put Palau on the map. The wall begins as shallow as 20 feet and is near vertical. At the top

of the drop-off you lock in with current hooks, and then take in the sensory overload show as thousands of schooling fish and hundreds of sharks parade by, only

David Taylor: Fernando de Noronha, Brazil.
"Deep wreck, mystical dolphins, feisty sharks—all on one island, all in one day."

inches away. Mantas, small whale species like false killer whales, even whale sharks have been known to stop by. No place to be without a camera."







David Taylor

Lives > Sayannah, Ga. Years Diving ► 15 Can Talk Because He's ▶

Written and edited more than 500 articles on world diving as an editor at RSD.

"Fernando de Noronha, Brazil. I

had my greatest single day of diving there. First a deep dive on a sunken Brazilian destroyer, the Ipiranga, upright at 180 feet. Few divers have ever seen it: lightbulbs still in their fixtures, officers' uniforms hanging in closets, deck guns dripping with sponges. During the surface interval we snorkeled outside

the Bay of Dolphins with the oldest and largest residential school of dolphins on earth, about 700 spinners who migrate in and out each day. Then came Laje dos Dois Irmaos, a shark breeding and feeding area. About 20 juveniles moved in and circled us, twitching like teenagers at

marine life from whale sharks lown to the tiniest anemones." a sock hop. Deep wreck, mystical dol-

phins, feisty sharks-all on

one island, all in one day."

Fred Garth

Lives ► Pensacola, Fla. Years Diving ▶ 27

Can Talk Because He's

Dived 30 to 40 countries, publisher/editor of Scuba Times.

"For a single dive site, I'd say **Bloody** Bay Wall at Little Cayman. It starts very shallow and the slope of the



"Hydroids, stars, sea urchins, anemones... diving under the ice is something else."

The great white is the most majestic animal in the sea. You can dive with humpback whales and so on, but the difference is teeth. Big teeth. -Carl Roessler

wall is vertical or inverted so it's incredibly dramatic. It's prolific with life—every type of Caribbean marine life from sharks and whale sharks down to the tiniest anemones."

Wes Skiles

Lives ► High Springs, Fla.

Years Diving ▶ 24

Can Talk Because He's ▶ Been a full-time underwater film producer and cinematographer for 10 years, shot TV programs including the PBS series "The New Explorers."

"Anywhere in The Big Blue, though off the Galapagos might be my pick. You'll find sperm whales, all kinds of sharks, giant mantas, pseudorcas, grampus, pilot whales, dolphins, etc. There's no finer diving than to jump into 20,000 feet of water, hang there in the infinite blue looking out into the unknown and wait for a pelagic encounter. Especially with one of the big boys, with something scary. I like to cruise out until we see about 1,000 birds circling and jump in."

Flip Nicklin

Lives ► Washington, D.C.

Years Diving ▶ 32

Can Talk Because He's ► Got 5,000+ dives, won an Academy of Underwater Arts and Sciences NOGI Award in 1994, traveled as a National Geographic photographer for 20 years.

"Anywhere in the higher Arctic, but off the northeast corner of Baffin Island might be best. With the water at 29 degrees, you'll be so cold and miser-

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able you'll be glad to give it up. But you'll also see big belugas, narwhals, bowhead whales—things very few people get to see. And there's great invertebrate life covering the bottom—giant stars, big anemones, bright red tunicates ... the whole bottom is alive.

"Under the ice, the visibility can be 300 feet. Where the ice is heaped up near the shore, there are patterns of shadows and streams of light, and your entry hole is like a spotlight."

Chuck Nicklin

Lives La Jolla, Calif. Years Diving 43

Can Talk Because He's▶

Father of Flip, owner of The Diving Locker, and cinematographer on The Abyss, The Deep and For Your Eyes Only.

"Flip said the Arctic? He's crazy. It's too cold there. For the prettiest dive, I'd pick the Red Sea, but for the most exciting dive, I'd pick the sharks off **Kavieng** on the north side of **Papua New Guinea**. Huge schools of really big silvertips and they're really fat, not as tame as in some other shark encounter dives."

Let's Go!

Can you make the ultimate dive? Sure, if you've got the dough. Airfare is extra except where noted.

McMurdo Sound, Antarctica and Baffin Island, Arctic

► An energetic dive travel specialist can design a custom trip, maybe on a chartered fishing boat. It won't be cheap.

Kavieng, Papua New Guinea

- ► Eleven nights on live-aboard *Tiata* from \$3,400, or 6-night land-based package from \$865; contact Tropical Adventures Travel, See & Sea Travel and others.
- ➤ Five nights at Malagan Beach Resort, four boat dives, meals, from \$736. Contact Reef & Rainforest.

Galapagos, Ecuador

- ► A seven- to 10-night live-aboard from \$1,995; contact Tropical Adventures Travel.
- ➤ Seven nights on the *Galapagos*

Aggressor from \$1,495; contact the Aggressor Fleet.

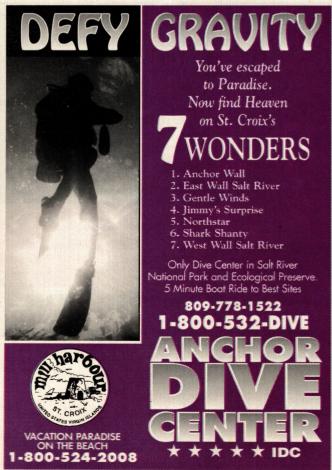
- Seven-night cruise, all meals, from \$2,195. Contact Caradonna Caribbean Tours.
- ► Ten nights on the Lammer Law or Galapagos Aggressor, from \$3,130. Contact the Aggressor Fleet.
- ► Seven nights on the *Mistral* with naturalist-led land visits, from \$1,750. Contact Reef & Rainforest.

Channel Islands, California

- ► Three days of boat dives with meals and air plus three hotel nights from \$299; contact Take Me, Too!.
- ► Two nights at Avalon, Catalina Island, boat dives, shore dives, from \$165. Contact Reef & Rainforest.

Great White Expeditions

- ► Three expeditions in 1997 including a 7-night live-aboard with one hotel night for \$3,995; contact Tropical Adventures Travel.
- ► Nine nights on sailing vessel *Falie*, limit 12 divers, \$4,995; contact See & Sea Travel, Reef & Rainforest and others.
- ➤ Ten-day live-aboard, from \$3,995. Contact Sportours.





SS Yongala Wreck, Australia

- ► A two-night live-aboard for \$365, or it's included in a six- to nine-night Coral Sea package; contact Tropical Adventures Travel, Adventure Express Travel, Sportours and others.
- ➤ Two days diving with Mike Ball's Dive Expeditions, from \$317. Call Mike Ball's Dive Expeditions.
- ► Included on 10-day Outer Coral Sea trip on *Elizabeth E II*, \$2,970; contact See & Sea Travel.
- ➤ Six-night trips, 17 dives and one-day white-water rafting, from \$1,360. Contact Caradonna Caribbean Tours.
- ► Two nights on the live-aboard *Watersport*, with meals, from \$319. Contact Reef & Rainforest.

Milne Bay, Papua New Guinea

- Seven- and 10-night live-aboard trip on *Chertan* or *Telita* from \$2,079; contact See & Sea Travel, Tropical Adventures Travel, Sportours, Reef & Rainforest and others.
- ► Walindi Plantation Resort on Milne Bay with two boat dives daily, meals, from \$265 per day. Contact Adventure Express.

Bloody Bay Wall, Little Cavman

- ➤ Seven nights, all meals 18 tanks at Little Cayman Beach Resort, \$1,383; contact Reef Fantasies.
- ➤ Seven-night live-aboard with meals, from \$1,495, or seven-night land-based, from \$1,012. Contact Caradonna Caribbean Tours.

► Five nights in private-

Fernando de Noronha, Brazil

ly owned cabana, 4 days of diving, home-cooked meals, taxes and transfers, \$699 per person. Call DUET Travel.

Aida II. Red Sea

- ► Ten nights in new live-aboard Angelina II, from \$1,700. Contact Adventure Express.
- Live-aboard Ghazala Explorer, meals, tanks, etc., from \$1,435. Contact Reef & Rainforest.
- ► Six-day dive cruise plus one night

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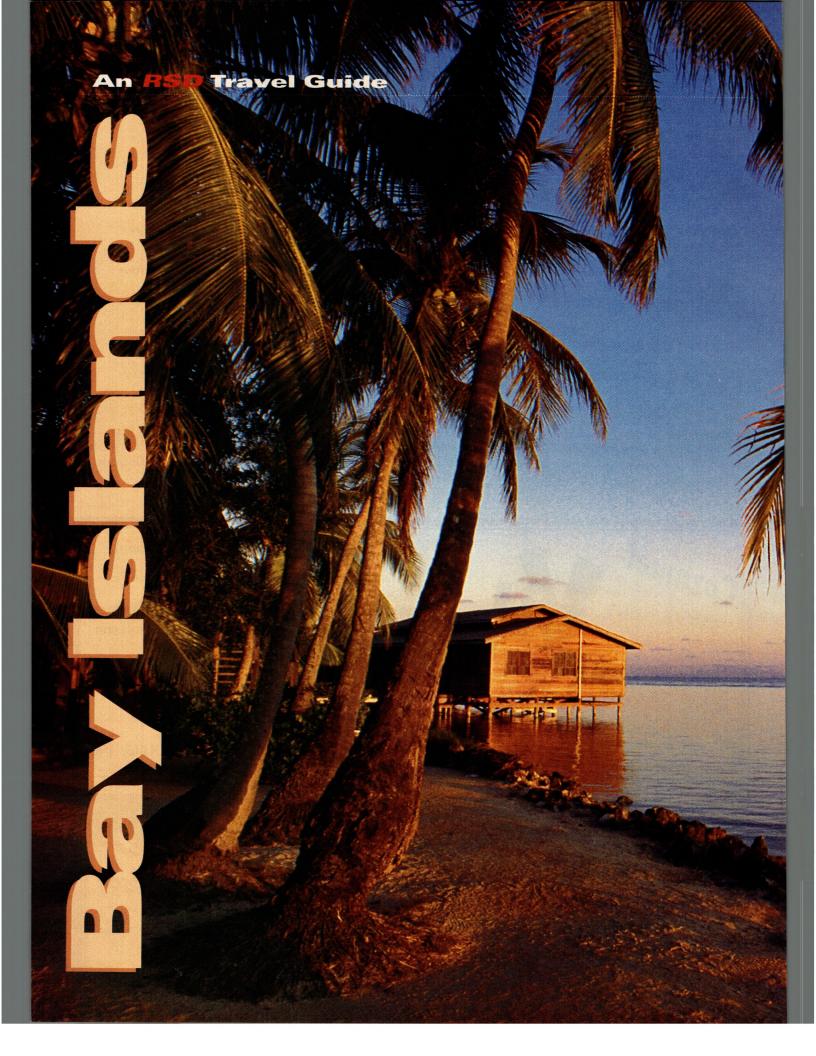
in Paris, all meals, from \$1,720. Contact Caradonna Caribbean Tours.

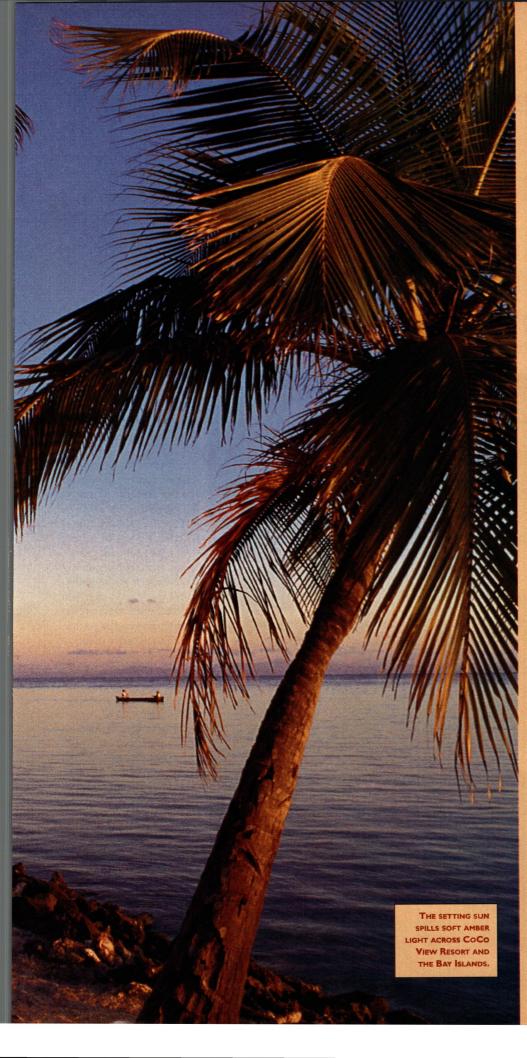
► Peter Hughes' Moon Dancer, eight nights from \$2,440. Contact Peter Hughes Diving.

Walker's Cay, Bahamas

➤ Three days, two nights, from \$515, including airfare from Florida, two meals and three dives daily. Contact Undersea Adventures.







JUST OFF HONDURAS'S COAST, IT'S THE LITTLE THINGS THAT COUNT. by NICK LUCEY

ike an overzealous Boy Scout, I was looking for some macho adventure in Honduras. The mystique is stereotypically Central American: civil wars, government unrest, the Iran-Contra scandal.

This gringo was expecting a cigarsmoking *el general* to greet the plane with cheap sunglasses and a swagger stick. And hey, it's the '90s: If you want a safari, guerilla war or expedition to Antarctica, you can just throw it on your Visa, right?

Wrong answer, señor. Honduras's Bay Islands are an idyllic set of emerald islands an hour's boat ride from the Central American isthmus. The Bay Islands are close enough to breed a well-established tourism infrastructure that ensures at least intermediate comfort, and remote enough to maintain a sharp, wild edge endowed with some fantastic diving. While many popular Caribbean diving destinations offer up their trademark critters—Grand Cayman, stingrays; Bahamas, sharks—or signature diving—Bonaire, shore; Cozumel, drift—the Bay Islands lack a recognizable mascot or gimmick. I was impressed with what I found: These islands just north of the mainland offer a little of everything while boasting life as grand as Utila's whale sharks and as intricate as the macro critters of the Cayos Cochinos. Sometimes, you have to look a little closer at a destination to find its identity.

ROATAN

The Bay Islands are like brothers, each with different traits, quirks and personali-

ties. Roatan is Ernesto, the big brother: honest, hardworking, strong. The 30-mile-long stringbean-shaped island is the beating heart and soul of the Bay Islands. Its geography, accented by a rolling rocky interior and shoreline pockmarked with bays and coves, made it an ideal hideaway for pirates in early days. Today, it harbors expatriates and divers looking for their own Central American adventure.

Diving

For divers, the island has three distinct regions. The south side is defined

by steep walls and is considered the lee, but gets most of the trade winds. Northern sites consist of gently sloping coral ter-

races punctuated by crevices, chimneys and swim-throughs. Just north of Roatan, this mild shelf drops vertically to the depths of the Cayman Trench. Honduras comes from the Spanish *hondo*, or deep, named by Christopher Columbus on one of his excursions into the New World. Despite the large volume of visitors to Roatan today, its east end and the nearby islands of Morat and Barbareta are still one of the Bay Islands' most pristine areas due to the distance from major resorts. On the east end, expect chimneys and pinnacles frequented by turtles, sharks and pelagics.

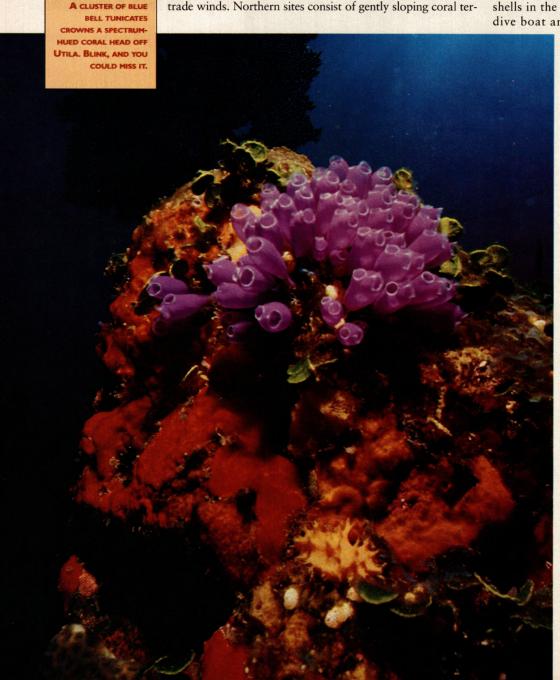
▶ Dive Sites

Prime sites include West End Wall, a gently sloping plateau of hard corals and tube sponges; look for turtles and grouper and keep your mask peeled for cowrie shells in the shallows. Drop out of the dive boat and down to Peter's Place,

where you're immediately surrounded by a posse of Nassau and black groupers in a series of coral terraces. The sloping wall at Crawfish Rock is so completely shingled with sheet coral that it seems as if you are floating over an enormous submerged rooftop. Lush stepped terraces, typical of northern reef sites, are interrupted only by valleys, spurs and grooves at Big Bight East. If it's an underwater rendezvous that you crave, the Institute of Marine Sciences at Anthony's Key Resort offers a dolphin encounter, where you can snorkel with the bottlenose variety at Bailey's Key for \$75 or dive with them for \$100.

▶ Dive Resorts

Given its size, you've got more options for accommodations on Roatan than on any other Bay Island. Each major resort on Roatan and the other islands has its own dive operation, and most people dive with the operation located at their hotel. Just east of French Harbor is Fantasy Island, a modern, private dive resort with the second best restaurant in the Caribbean (according to RSD's Readers' Choice



Diversions

For a taste of stateside food—steaks, burgers, nachos—visit Rick's American Cafe built high above the rain forest canopy in the

west end near AKR. Drive around the island; after all, it is the only one with paved roads. Sandy Bay car rentals can rent you a Suzuki Samurai for about \$50 a day. The Roatan Museum next to Anthony's Key Resort is a well-maintained facility, with excellent anthropological displays, artifacts, maps and photographs. If you like to disco 'til dawn, Roatan is the place—about the only place. Shake your thing at Bolongo's in

French Harbor or the Harborview in Coxen Hole. The locals drink Salva Vida, a good beer, but tourists seem to prefer Port Royal, Honduras's primary export brew. Many divers like to get to bed early, though, as not to miss the dive boat in the morning.

GUANAJA

Guanaja is the middle child, Geraldo: quiet, contemplative and stylish. The Bay Islands' second largest and easternmost island, measuring nine by three miles, is one of those special places that feels very personal, as if it were reserved just for

Jim's Silver Lode GUANA.M Alderson Wall Crawfish Rock **Black Rock** Big Bight East inbow Reef 💌 BONACCA ROATAN Peter's Place FRENCH HARBOR COXEN HOLE st End Wall Caribbean TILA SETTLEMENT **Ron's Wreck and Reef** CAYOS COCHINOS LA CEIBA

you. The pace of life seems to slow down a notch as soon as you arrive.

The spike-shaped island is rugged, with hills rising dramatically from shore. Three hamlets lie on the island's fringe, plus Bonacca, a tiny island off Guanaja and its largest town, often referred to as the Venice of Honduras. When asked why residents choose to pack themselves onto this overflowing island when Guanaja is uncrowded and roomy, my water taxi driver explained that the bugs are not as bad on Bonacca. This said, apply Deet liberally wherever you are on Guanaja.

Diving

The underwater topography is varied and fascinating, marked by spur-and-groove reefs in the south and coral mazes and DESPITE THE FACT THAT
ROATAN HAS BEEN A
POPULAR DIVE
DESTINATION FOR
YEARS, PLACES LIKE
ANTHONY'S KEY
RESORT STILL RETAIN
THEIR RUSTIC CHARM.



BAY ISLANDS DIVE IN



Diving conditions

Summertime is a great time to dive Roatan and the Bay Islands, when the weather is dry, the seas generally flat and visibility peaks at 100 feet. Expect water temps in the low 80Fs in summer, high 70Fs in winter. Bring a dive skin or shorty at the very least. Local dive operators agree that the water temperatures are falling back to normal levels here after being unusually high, contributing to some serious coral bleaching. You may be asked to contribute an obligatory \$2 U.S. per diving day fee to the Cornerstone Emergency Medical Mission on Roatan, where the hyperbaric chamber is located.

Documents
U.S. citizens need
a passport to visit
Honduras. A visa is only
needed for stays over 30
days.

CÇ

Language Although Spanish

is the official language of Honduras, English is widely spoken in the islands. Do yourself a favor, however, and learn some basic phrases. The locals are friendly and have a tendency to want to agree with you no matter what you say. This can cause confusion when asking directions or flight information.

Electricity
110 volts, 60 cycles; just like the United
States and Canada. Locals say that Roatan has the best power plant in the country. Electricity on the smaller islands is generated by individ-

ual resorts. Expect to lose power at least a couple of times during a week-long stay.

Water

Ask the front desk about the hotel water supply. If drawn from town, consider it unsafe and drink and brush your teeth with bottled water. Be careful with salads and ice, too. If you travel a lot, consider a purifier, which will run you about 50 bucks at a camping store.

Money

At press time, the exchange rate was I I lempiras to the U.S. dollar. Expect fluctuations and the occasional greedy shopkeeper. Departure tax is \$9.



Getting there and around

TACA flies nonstop from Miami, New Orleans and Houston to Roatan and San Pedro Sula on the mainland, Honduras's industrial hub. Continental and American Airlines also have extensive Central American itineraries.

Don't be surprised if, upon arrival, you're greeted by a local who asks you where you are staying and immediately grabs your bags and whisks you off to your resort. Dive resorts provide transfers to and from the airport on all the islands.

Droves of baggage handlers (expecting tips) means you will enjoy very little hands-on time with your luggage. Slipping the handler at the airline ticket office a couple lempiras here and there will ensure your duffel makes it on the

plane. Worth less than a dime, a lempira goes a surprisingly long way in Honduras.

Except for cabbies, driving is on the right. A valid U.S. license is required to rent a car on Roatan or in La Ceiba.

If you're traveling interisland on Isleña or SOSA, chances are you will be making connections through La Ceiba on the mainland. Bring a book to make the wait quicker and more enjoyable. If overnighting, I recommend the Hotel Colonial downtown or La Quinta on the outskirts (not to be confused with the American motel chain).

000

In case of emergency

The only chamber is on Roatan, (011) 504-45-1515.



More information Lonely Planet puts

out a great guide to Central

America, which has a chapter on the Bay Islands. It also has information on Honduras's national parks and Mayan ruins such as Copan, excellent for day trips to the mainland, Diving Bay Islands, published by AquaQuest, is a good reference, with island maps and individual dive site descriptions.

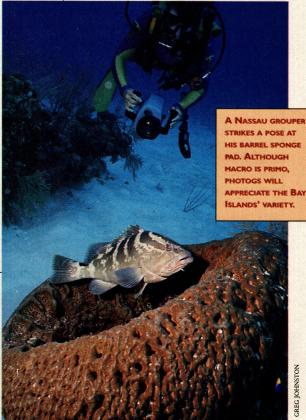
looped with eerie caves and tunnels that wind through the reef. Shallow or deep, Alderson Wall is one of Guanaja's best walls, with overhangs of coral choked with sponges, sea whips and tunicates.

▶ Dive Resorts

Despite Guanaja's remoteness, two resorts have been here for a couple of decades, and have all the amenities and experience you'd expect from modern dive establishments. Bayman Bay Club on the west side and Posada del Sol on the east are the two most popular. Bayman Bay's 18 cabins on stilts are nestled in the hills, with great Caribbean vistas, incredible sunsets and hiking trails. Posada del Sol, which earned fifth highest overall rating and second best value for its dive operation, offers tiled Spanishstyle villas and a pool to cool off in. Both have full-service dive shops and dive all around the island's marine park. A \$10 donation will be added to your bill to help preserve the park.

Diversions

For topside excursions, take a water taxi to Bonacca, Guanaja's largest town (pop. 4,000) located on a small islet off the



tunnels in the west and north. As usual in the Bay Islands, the macro life is phenomenal. Pack your lenses accordingly. The resorts on either side of Guanaja tend to stay on their own sides, keeping boat rides to a minimum. If you're staying at Bayman Bay in the west and want to dive the *Jado Trader* or Jim's Silverlode in the east, speak up and make a request. Due to the island's shape, there's always a lee.

▶ Dive Sites

Guanaja's *Jado Trader* is the Bay Islands' signature wreck dive, a 200-foot freighter lying on its starboard side in 110 feet of water. You may luck out and see hammerheads, but at least expect the regulars: grouper and morays. Shallow Rainbow Reef on the west side is a fascinating labyrinth of coral valleys winding through a reefscape ablaze in warm-hued tube and elephant ear sponges. Bring a light to Black Rock,

main island. The fare will set you back about 15 bucks one way (due to high gas prices) from either one of the resorts. Well-marked hiking trails with breathtaking vistas crisscross Guanaja, so pack

UTILA

Utila is Umberto, a 20-something Generation-Xer. The westernmost Bay Island wears combat boots while the others wear sandals. The atmosphere is young and wild, crawling with American divers and the European backpack set, drawn here by marketing that claims this is one of the cheapest places in the world to get certified. Indeed, RSD readers rated the island second best value in the Caribbean (Readers' Choice Awards, Jan./Feb. '96). Even the geography of the island is different. Except for Pumpkin Hill, a 400-foot volcanic peak in the north, Utila is dead flat, marked by mangrove swamp and an ironshore coast. Topographically, it looks more like the Bahamas than the Bay Islands.

With a population of only 2,000, Utila Settlement in the southeast is like a small Central American Key West, with more than a dozen dive shops packed along the island's main pedestrian thoroughfare. Quaint, bright-

ly colored houses and ramshackle buildings sit side by side in town. Besides a few small sandy cays in the southwest, the east end is the only inhabited portion of the island, as the central and west are covered by impenetrable swamp.

Diving

Cliché but true: Utila is one of the bestkept secrets in the Caribbean. Here, wonderful walls and patch reefs have seen the traffic of dive travel for less than five years, as the island was a quiet backwater until then. Utila's excellent macro life ensures some of the best night diving around. From the small to the big, dive operators even claim that you have a great chance of seeing a whale shark in a week-long stay.





The flat terrain means less runoff than the other Bay Islands, making visibility slightly higher here.

Resorts are charged with the task of enforcing marine park rules, and they are currently working on an ambitious mooring buoy program—there are 35 now; 60 are planned.

▶ Dive Sites

The Pinnacles appeals to the dive vets and the wet-behind-the-ears. The shallow reef crammed with juvenile drum, blennies, crabs and tunicates is worth the 45-minute boat ride in itself. Throw in a dramatically sheer wall that plummets to about 200 feet, accented with black coral stalks and barrel sponges, and you have one of Utila's best, most remote and wild dives. Ron's Wreck and Reef is a popular night dive; turn off your light to see hundreds of shrimp eyes peeking at you from the hard coral terraces. Jack Neal Reef is a pleasant second dive, a network of sand channels that crisscross the spur-and-groove. Once again, think small: anemones and tunicates. There's even a mini-wall here, with jacks, snapper and grouper. (Continued on page 99)

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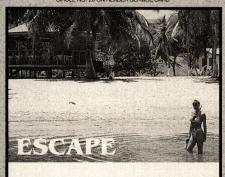
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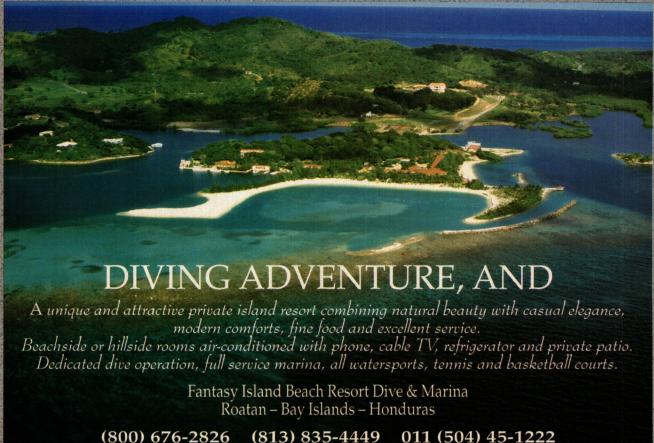
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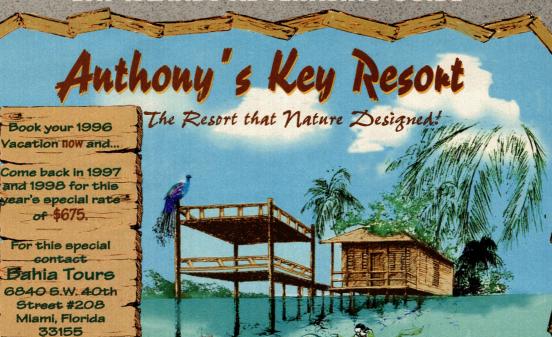


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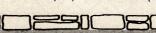


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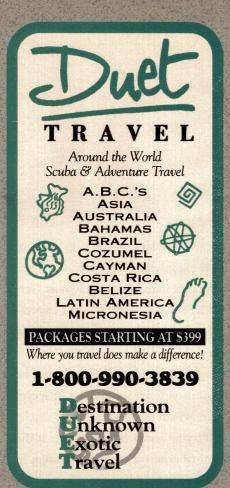
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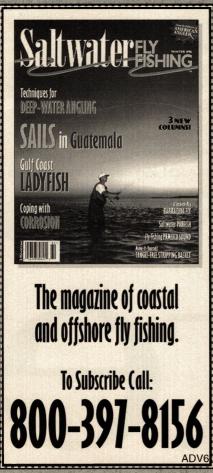








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RESORTS

Anthony's Key Resort (Roatan)

(800) 227-3483 or (011) 504-45-1274; fax (305) 666-2292 e-mail: bahia@gate.et e Internet: http://www.empg.com/bahia-tours e Dedicated dive resort, 56 wooden cabanas built on a palm-covered islet and on a lush green hillside. Six dive boats (42 ft.) and full-service dive and photo shop. Dives northwest and west side of Roatan, a declared marine sanctuary. 25 years in operation. Hands-on owners with customer service our number one priority. Best package: Accommodations, diving, meals and more, \$600 per person, not including tax. Contact Bahia Tours, (800) 443-0717.

Bay Islands Beach Resort (Roatan)

(800) 4 ROATAN, (561) 624-5774 or (011) 504-45-1425; fax (561) 624-7751 or (011) 504-45-1855. Resort is a former private estate with manor house and villas on 44 acres, with 450 feet of natural sandy beachfront. Dives West End/Sandy Bay Marine Reserve. Unique, friendly staff who spoil guests. Best package: 8 days/7 nights, all air-conditioned rooms, full dive package (three boat dives daily, night boat dive, unlimited shore diving), three full meals daily, welcome drink, airport transfers, entertainment, beach picnic, punta and limbo party, island buffet, \$725 per person, dbl. occ.

Bayman Bay Club (Guanaja)

(800) 524-1823 or (954) 572-1902; fax (954) 572-1907 • e-mail: bayman@ix.netcom.com • Internet: http://bayman.lwm.com/bayman • The resort is on 100 acres of private tropical hillside property with a frontage of 1,000 meters on the Caribbean, 200 meters of which is a private beach. All 18 cabins have an ocean view and are within a five-minute walk of the main clubhouse, beach and 100-meter dock. The resort has excellent snorkeling from the beach and a network of hiking trails. Dives walls, wrecks, tunnels, swim-throughs, canyons, night dives inside the channel and a feeding station. Best package: summer special extended until November, \$699.

CoCo View Resort (Roatan)

(800) 282-8932 or (352) 588-4132; fax (352) 588-4158 * e-mail: info@Roatan.com * 25 rooms: 4 over-the-water bungalows, 9 air-conditioned rooms and 12 standard oceanfront rooms. We dive the south side of Roatan and offer excellent shore diving and a wreck located 100 yards in front of the resort. Best package: All-inclusive, 7 nights, 6 days of 3 boat dives daily, unlimited shore diving, 3 meals daily, tax, transfers, \$775 per person.

Fantasy Island Beach Resort (Roatan)

(800) 676-2826 or (011) 504-45-1191; fax (813) 835-4569 • Internet: http://www.empg.com/fantasy-island • 80-room resort located on a 14-acre private key. Best restaurant on the Bay Islands, swimming pool and tennis courts. Dives South Wall, north shore of Roatan and 70 different sites. We offer proximity to the reef, access to both coasts and snorkeling areas. Best package: 7 nights/8 days, 20 boat dives, unlimited shore diving and meals, \$875 (beachfront accommodations); \$675 (standard accommodations).

Laguna Beach Resort (Utila)

(800) 66-UTILA, (318) 893-0013 or (011) 504-45-3239; fax (318) 893-5024 • Six natural wood bungalows (a total of 10 rooms that accommodate 20 people), on-site dive shop, on-site restaurant, lounge, reverse osmosis water system, located on a private peninsula, 100 yards from the drop-off. Airconditioned rooms available. Utila has more than 100 dive sites and half of these are within a 15-minute boat ride from the resort and the rest are within 40

minutes. We dive walls, drop-offs and seamounts. We offer best shore diving, excellent food and a professional dive facility. Best package:
Accommodations, 3 boat dives daily, 2 night boat dives weekly, unlimited shore diving, 3 meals daily, transfer from Utila airport to resort, \$750 per person. Call Utila Tours, (800) 668-8452.

Utila Lodge (Utlla)

(800) 282-8932 or (352) 588-4132; fax (352) 588-4158 * e-mail: info@Roatan.com * Eight air-conditioned rooms built over the water, only one-and-a-half blocks from town. All Utila dive sites only 10 to 60 minutes from the resort. We offer personalized service and an excellent diversity of dive sites. Best package: 7 nights dbl. occ., accommodations, 2 boat dives daily, 2 night boat dives weekly, unlimited shore diving, 3 meals daily, tax, transfer, \$725.

Utila Reef Resort (Utila)

(800) 263-9876, (800) 525-3833 or (011) 504-45-3254; fax (504) 262-0105 • e-mail: Indfall@aol.com • internet: http://www.nol.net/bobby/utila/utila.htm • Eight pampered guests will delight in their own island tree house, complete with air-conditioning, fans, louvered sliding doors providing dramatic seaside views, hot water and private baths. Delicious American- and Cajun-style meals served buffet-style. Utila Reef Resort is a diver's dream come true. Dives Willie's Hole, Black Hills, Blackish Point and other favorite seamounts. Best shore diving in the Bay Islands. Best package: 8 days/7 nights, 3 tanks dives daily, unlimited shore diving, all meals and snacks, \$20 bar tab credit, \$795 per person, dbl. occ. Contact Landfall Productions, (800) 525-3833, Tropical Tours, (800) 711-4700 or Island Dreams, (800) 346-6116.

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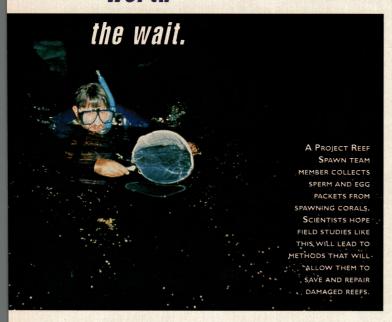
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Corals only do it once a year, but it's definitely worth



In the Golden Hour Just before sunset, I wait on the stern of the *M/V Spree* and stare down at the Gulf of Mexico's flaccid blue surface, hoping for sex.

It's the eighth night after the August full moon and the water here at the Flower Garden Banks is soon to be alive with a grand show of the ocean's fertility: a mass coral spawning, one of the great spectacles of the water world.

During my earlier dives that day I peered closely at

the star and brain corals for a sign of the orgy soon to come, but detected nothing unusual. However, coral scientists like Dr. Steve Gittings, manager of the Flower Garden Banks National Marine Sanctuary and our expedition leader, can recognize subtle changes in the corals on the day of the spawning. And tonight Dr. Gittings is confident. He's seen the signs. A few hours after sunset, he predicts a variety of corals will release packets of sperm and eggs, filling the waters with the fluids of life.

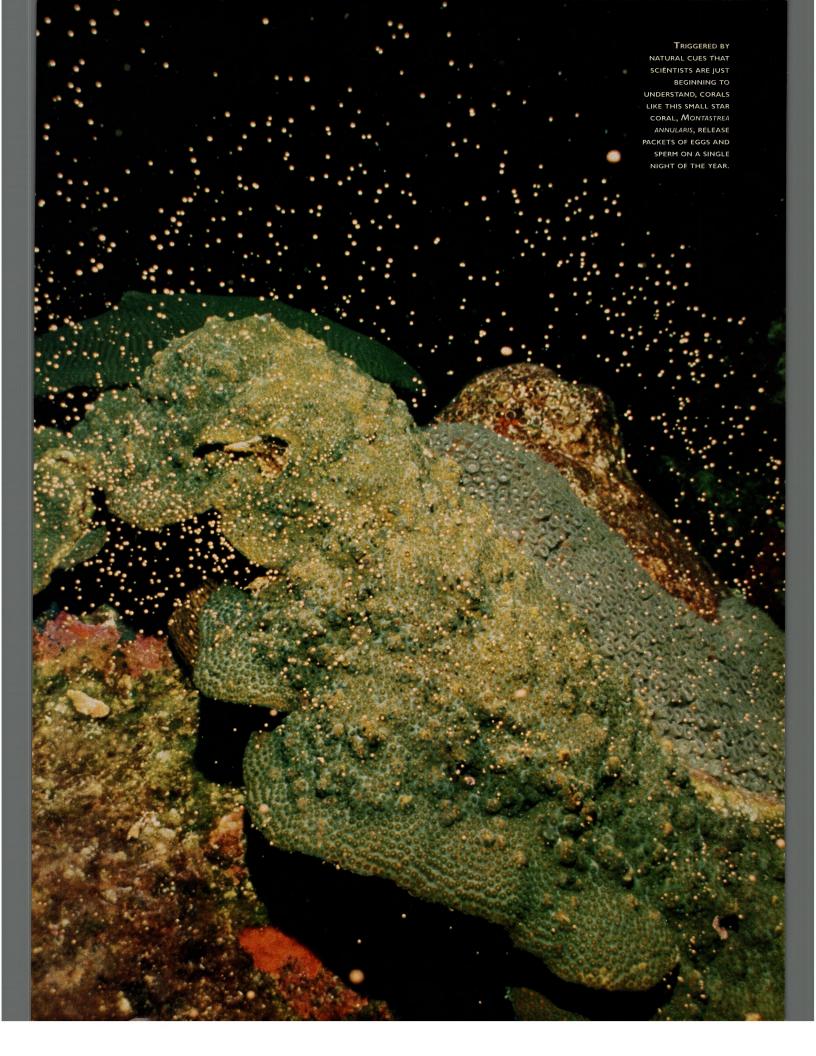
Our film crew will try to document the spawn at the Flower Gardens, the northernmost coral reef system in the Gulf, about 100 miles south of Freeport, Texas. Our presence here tonight is a direct result of the popularity of these raised salt domes among recreational divers, the first to spot spawning here in 1990.

Nearly a decade earlier, coral spawning in the western hemisphere was unknown, although it had been a well-documented phenomenon in the waters of Australia's Great Barrier Reef for years.

Only when sport divers returning from the Flower Gardens reported to Texas A&M scientists that they had seen

clouds of whitish sperm released into the water column by some

BY MARTY SNYDERMAN



corals, and thousands upon thousands of packets of eggs and sperm by other corals, did scientists begin to confirm spawning as a worldwide, annual event that could be predicted accurately.

The first field study at the Flower Gardens was in 1991, led by Dr. Alina Szmant, an expert in coral reproduction at the University of Miami. She had previously observed coral spawning in the laboratory during the August full moon period, and suggested this period as the best time for the expedition. The spawn occurred just as she predicted and has been used as a model for future spawns, including a 1993 trip during which I filmed the Flower Gardens spawn for a National Geographic television special, being produced by Howard and Michele Hall. Again, the spawning occurred like clockwork.

It's still a mystery to scientists why this time period—a three-night window around the eighth day after the August full moon—is favored by corals. Factors such as water temperature, light levels, the lunar cycle, water salinity, depth and current are all part of a complex equation known only to the

corals themselves, who communicate via

chemical signals.

But scientists do agree on why understanding coral spawning behavior is important: Such knowledge could give them the ability to save or even repair reefs by cultivating corals from one site and replanting them in another, especially in the event of an environmental incident. Such a threat is very real for areas like the Flower Garden Banks, located within sight of offshore oil drilling rigs and near to commercial fishing zones.

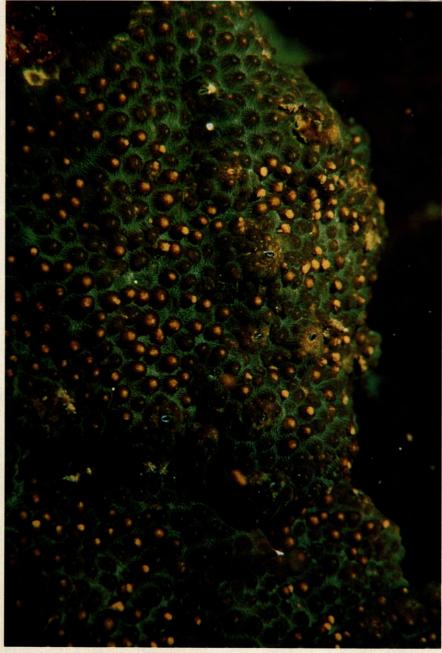
bout 45 minutes after sunset, I'm still sitting at the stern when a slick of pinkish packets begins to appear on the surface. We're caught a little off guard because in years past the spawning didn't start until several hours after sunset. But soon we're geared up and in the water, heading down for the big show.

The first showstopper I see is a large head of star coral, Montastrea cavernosa, that is smoking like a chimney-clouds of sperm are spewing up into the water column, a virtual factory of life. I look around and all the other Montastrea are also beginning to heat up like miniature volcanoes. Then the small star coral, Montastrea annularis, begins to follow suit, releasing sticky, pink BB-sized packets of sperm and eggs that rise to the surface to join what is quickly becoming a flat bowl of Grandma's primordial home soup.

Scientists suspect that as ambient pressure decreases during their ascent, the packets rupture and release their gametes into the water, where they are fertilized by the waiting sperm. Some of the resulting larvae settle down in shallow areas and refurbish existing reefs, some drift off to create new reef communities, and most never get anywhere at all but are scooped up as a high-protein meal by other marine creatures.

The next night, it's the brain corals' turn.







A snowstorm of sperm and egg packets is sprayed into the water column by *Diploria strigosa*. The tops of these brain corals are crawling with invertebrates—brittle stars, bristle worms and crabs—boldly angling for a rich, free meal. Obviously inspired, some of the invertebrates such as

Want To Do It Together? The Birth of Project Reef Spawn

n 1995, scientists took the first hemispheric look at coral spawning. Jim Hart, founder of Oceanographic Expeditions in New Orleans, helped to organize and coordinate teams of sport divers and scientists in four locations as a part of Project Reef Spawn. Teams worked at Key Largo, Fla.; Cozumel, Mexico; Roatan, Honduras; and the Flower Garden Banks.

Spawning was reported in all areas, with several important surprises:

- ► A species of brain coral, Colpophyllia natans, was observed spawning for the first time at Molasses Reef in Key Largo and at the Flower Gardens.
- ► The spawning occurred over an extended three- to five-hour period, not predict-

ed by the shorter 1991 spawning model.

ing model.

It was predicted that the Keys reefs, the easternmost and therefore subject to the earliest sunset, would be the first to spawn. But a cellular phone link between the four sites revealed that the Keys were actually the last to begin.

Both large and small star corals spawned simultaneously at Roatan and the Flower Gardens, suggesting that latitude has no discernible effect on the timing of spawning activity.

To participate in 1996's or 1997's Project Reef Spawn, contact:

Jim Hart
OCEANOGRAPHIC EXPEDITIONS
4418 Saint Ann St.
New Orleans, LA 70119
tel and fax: (504) 488-1573
e-mail: seascience@aol.com

Christmas tree worms and brittle stars can't hold back and begin spawning, too.

It's wild, chaotic. Sometimes the release is slow and gradual, but sometimes a hailstorm of egg and sperm packets suddenly explode, as if someone flipped a switch. Then the fish move in: Silversides, You can follow the results of this year's Project Reef Spawn, due to occur around Aug. 6-8 and Sept. 2-4, on RSD's Web site (http://www.scubadiving.com) or our site on America Online (keyword: RSD). In our November issue, check "Seaview" for a full report.

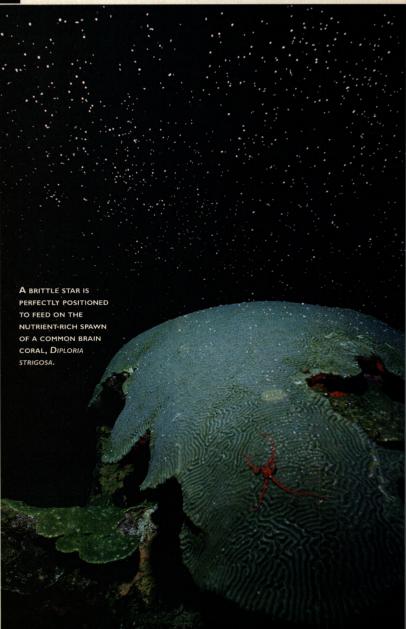
damselfish and barracudas begin feasting on water thick with nascent life. Above us, several sharks—probably silkys—circle in the dim glow of the boat lights. The entire food chain is here in a nonpareil explosion of life.

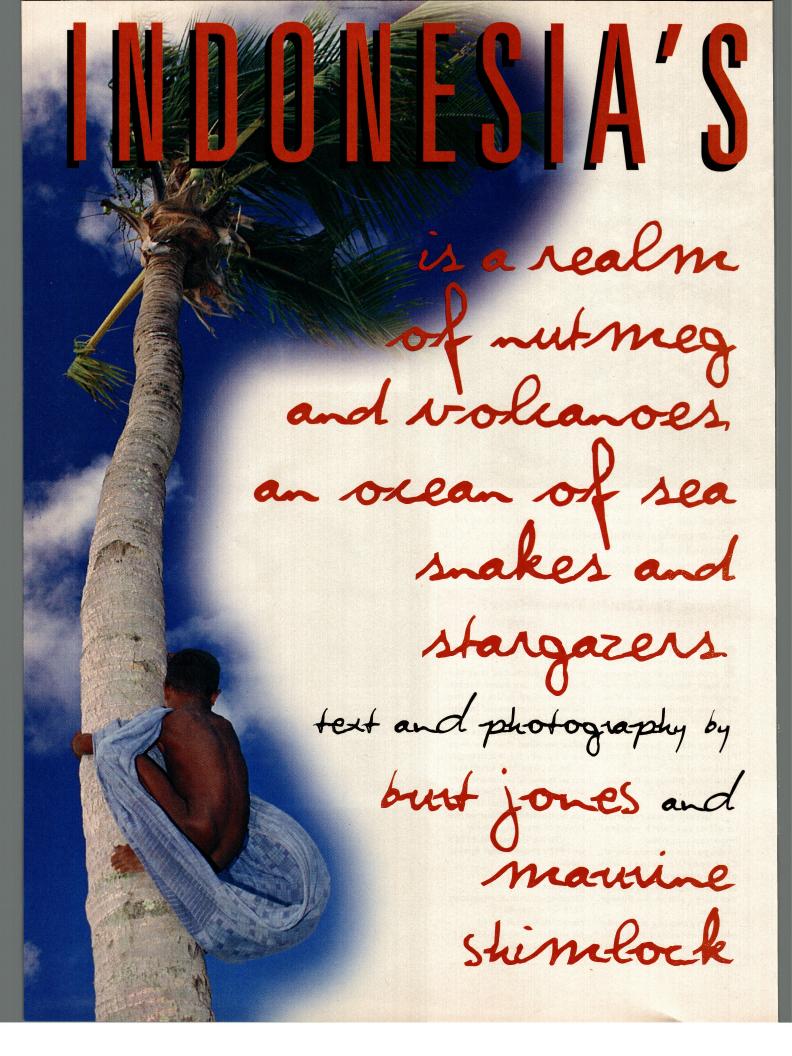
About the only fish we don't see that night is the ocean's largest—the whale shark. They've been reported in increasing numbers in the Flower Gardens during the spawn. Dr. Gittings suspects that the behemoths come to feed on the gush of raw life spewed forth by the corals, but he remains stumped as to how the sharks know the event is going to occur.

Maybe they watch the moon.

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San Diego-based Marty Snyderman's "Beginner's Guide to Underwater Photography" appeared in the August issue of RSD.





BANDA SEA THE BANDA SEA'S CURIOUS AND FRIENDLY SEA SNAKES SEARCH VOLCANIC CREVASSES FOR THEIR FAVORITE SNACK MORAY EELS. LEFT: A CHILD SHINNIES UP A COCONUT PALM ON HATTA ISLAND, POISED AT THE WORLD'S HIDDEN EDGE

arly morning in Indonesia's Banda Sea. The perfect black cone of Manuk Island noses out of the water, more of a mirage than a real island. Cocooned in the ship's cozy lounge and munching on an Indonesian breakfast of fried noodles and fruit, we can barely feel

the dips and rolls from the chorus line of deep-water swells beneath us. We have to remind ourselves

that we're floating close to the epicenter of the Ring of Fire, a potentially violent volcanic area in the Pacific Ocean where tumultuous inner-earth activity has spawned Manuk Island and thousands more just like it.

A few years ago in a starlit Balinese garden, Kal Muller, author of Underwater Indonesia, drank tea with us and stirred our imaginations with tales of diving adventures that crisscrossed the Ring of Fire. When one of our companions asked the inevitable question-"What's your favorite site?"-Kal smiled and said quite definitively, "Pick any spot in the Banda Sea and it will be twice as good as any other spot on earth."

Now hundreds of intense planning hours later we have traveled far across the Pacific to turn a dream sparked by a casual conversation into a reality and dive in this remote sea ringed by islands with exotic sounding names like Irian Jaya, Tanimbar, Sulawesi and Seram.

Spice Islands

The islands of the Banda Sea are the fabled Spice Islands, the impetus for Europe's invasion of the Far East during the 16th and 17th centuries. All of Europe hungered for the sublime flavors of nutmeg, mace and cloves, but an Arab trade monopoly refused to divulge the location of the spices' source. Stymied by the Arabs, European merchants financed several exploratory expeditions in the late 15th and early 16th centuries. None were successful until Portuguese explorers navigated Indonesia from west to east and landed in the Banda Islands around 1512.

By the mid-16th century, British and Dutch ships managed to cross the Indonesian archipelago and challenged Portugal's dominance of the spice trade.

When they weren't waging war on one another or decimating local populations, colonial traders stocked European markets with exotic goods like bird of paradise feathers, seaweed, pearls and fragrant spices. In 1667, more than 150 years

four hundred years ago, all of europe hungered for the nutmen, mace



and cloves that grow wild in the spice islands.

after the initial invasion of Banda, the Dutch finally negotiated total control of the Spice Islands and changed the balance of world politics for hundreds of years. When they traded Manhattan to the British in exchange for Run, the last non-Dutch island in Banda, the Dutch secured a trade monopoly that ruled the islands in the Banda Sea until Indonesia's post-World War II independence movement.

Watch Your Back

Down on the dive deck we are all warned that Manuk's underwater slopes are covered with thick black mud from recent volcanic eruptions. We are admonished to "watch your fins, watch your buoyancy, but, most importantly, watch your back." This last request seems strange until our barrel-chested divemaster explains that Manuk is a haven for sea snakes. Like cartoon characters, the divers turn in unison and rivet their attention to the chalkboard. We learn that the snakes are friendly, even curious, and that there is no

cause for alarm if we find a snake entwined around a fin or resting near an outstretched hand.

There are a few squeamish looks from the group, but everyone gamely suits up and descends. Red and pink soft corals sprout from the black muck, and nascent acropora corals spread out from spindly bases anchored to the volcanic substrate. And, everywhere we look, sea snakes. Gliding over the

spongy dark sediment and poking their tiny heads between boulders dislodged during volcanic eruptions, the snakes search for their favorite food: moray eels. These striped reptiles are bold enough to stare at me through my dome port until I shoo them away

Fire Mountain

with a cautious wave.

Over beers and snacks of dried salted peas in the salon, Jason, a 20-something American student whose excellent Indonesian language skills landed him a job on our liveaboard, explains that we will soon be steaming between Banda Neira Island and Fire Mountain—Gunung Api—our next dive site. Most of us are ready to dive, but a

few landlubbers opt for a ride to shore in the decked out *kora kora* "war canoes" that greet us as we arrive in Banda Harbor. From the bow of the ship, the rest of us watch our companions, still wobbly-legged from five days at sea, climb up the worn harbor steps, then disappear around the base of Fort Belgica, a fully restored early 17th-century Dutch citadel that stands guard over Banda Neira.

In 1988, Fire Mountain erupted with a vengeance and destroyed the villages nestled around its base. The eruption also smothered the surrounding reefs with a three-foot layer of ash and lava. Squinting up at the slopes of this 2,000-foot vol-





cano, we see that Gunung Api's slopes are cultivated once again. Nutmeg trees frame subsistence plots of fruits and vegetables, and everything is the deep green that comes from rich volcanic nutrients.

The land's verdant color is replaced under water with a pale marine blue, and where we expect to see barren rock, we find a stunning amphitheater of coral. There is no logical explanation. Only eight years after the devastation, there are hundreds of newly formed table corals that should be no more than eight to 10 inches in diameter. These broad corals cascade down Gunung Api's walls in two-to three-foot-wide layers.

Swimming along Api's walls is an eerie experience, like wandering through a deserted Broadway theater. The stage is set, but the play has not begun. Despite the outstanding acropora corals, there is little diversity. Other coral species and the supporting cast of fish have not reappeared, and we long for the shoals of barracuda and trevally we water-danced with on our way to Manuk.

East of Banda Neira Island, below the submerged ring of Korkop atoll, we find the walls we've been searching for. Leaving our ship idling in Korkop's lee, three sets of divers race zodiacs through foam-tipped waves to a red marker buoy. On Korkop's slope, orange gorgonians and crimson sea whips grow thick, and reef fish swoop back and forth in perpetual motion. A mixed school of jacks and barracudas races by, flanked by two enormous yellowfin tuna. It is a perfectly balanced group of marine predators, using the quickening currents to guide them until they disappear from our sight.

That night, out-of-synch wind and waves keep the anchor chain crashing into the walls of our bow cabin. From our small porthole, we glimpse twinkling lights from cooking fires on nearby Hatta Island, and we are reminded that we aren't quite at the edge of the world—but we're close enough to see it.

Too Many Fish

Hours before dawn, the ship departs for Koon Island and its mystical Too Many Fish Point. The first time we heard about Koon and Too Many Fish Point, we were in a smoky, beer-stained bar in New Orleans, the kind of place where fish stories hatch and take on a life of their own.

The sea around Koon Island is flat calm, and on the horizon, the line between sea and sky is blurred beyond recognition. The sky is smudged with clouds—a pair

BANDA SEA TRAVEL PLANNER



Location and Topography

Located at the eastern end of the Indonesian archipelago, the Banda Sea covers approximately 180,000 square miles of ocean bordered by Irian Jaya on the east, Timor on the south, Sulawesi on the west, and Seram on the north. Banda's islands were formed by upraised coral atolls or volcanic eruptions. There is exceptional diving in the coral gardens inside the atoll lagoons although visibility suffers except during the incoming tide. The volcanic islands offer sheer walls and cruising pelagics, but coral growth and diversity depends on how much time has elapsed since the last eruption.

Climate

The Banda Sea is the Bermuda Triangle of Indonesia. Its weather patterns run opposite to the climate in the rest of the archipelago. When all of Indonesia is hot and dry, the Banda is wet and stormy and vice versa. Rain and wind make diving difficult in the Banda Sea from May through September. The best months to dive are November through January. Daytime air temperatures usually hit the mid-90Fs and are paired with the expected tropical humidity. Water temperatures hover around 80F yearround. Some type of thermal protection is recommended. Visibility changes with the currents and tides, but generally our autumn and early winter months are best for

Getting There Direct flights depart daily from the U.S. west coast to Indonesia, arriving in Jakarta or Denpassar on Bali. Flights leave Los Angeles in the evening, cross the international date line and arrive early in the morning on day two of your trip. Bali is the recommended stopover of choice, with innumerable hotels in every price range, great shopping and unbeatable photograph-

clear water.

ic opportunities at daily festivals, dances and temple ceremonies. From either Bali or Jakarta, there are connecting flights to Ambon, the gateway to the Banda Sea. If you want to explore the Banda Islands themselves, there is a flight to Banda Neira Island from Ambon three times a week. Americans traveling to Indonesia will be issued a 60-day visa upon arrival. For international and in-country flight information, contact Garuda Airlines (800) 3-GARUDA. Continental also flies to Bali from the West Coast, transiting through Guam. Call (800) 231-0859 for reservations.

The Indonesian unit of currency is the rupiah, currently trading approximately 2,200 to one dollar. Most hotels and restaurants in larger towns accept credit cards and traveler's checks, but it's a good

Currency

idea to have a supply of local currency when traveling to remote islands where banks are not always available.

Electricity

Electric current in Indonesia is 220 volts.

Be prepared to supply your own adapter and converter.

Language and Customs The farther you travel away from Jakarta and Bali, the less English you'll hear. Signs in Ambon are posted in both English and Bahasa Indonesia, the official language for the entire archipelago. Although Indonesia is the largest Muslim country on earth, there are a variety of local religions and indigenous cultures. Away from beach areas, neither women nor men should wear revealing clothing. When visiting temples, shoulders of men and women must be covered, and sarongs and sashes are required clothing for men and women. Entry into

mosques requires head cov-

erings as well. You can rent

appropriate clothing for a

few cents outside the gates

of most temples or mosques.

Dive Operators

The Banda remote, and diving facilities are few and far between. Arrangements should be made well in advance. Land-based operators include: Ambon Dive Center, which specializes in sites around Ambon Island, including Nusa Laut and Laha Bay (tel: 011-62-911-55685; fax: 011-62-911-55685). On Banda Neira Island, contact the Maulina Inn for accommodations and diving (tel: 011-62-910-21022 or 21023; fax: 011-62-910- 21024). From Banda Neira, you can explore Hatta and Run Islands, weather permitting.

A live-aboard is necessary to explore the outer Banda Sea islands. With the demise of the Cehill in 1995, the MIV Pindito is the only live-aboard regularly visiting the Banda Sea. Designed like a traditional Indonesian sailing vessel, the Pindito is comfortable and spacious. To book the Pindito, contact Maluku Adventures at (800) 566-2585 or (415) 731-2560.

Several U.S. travel agencies have extensive knowledge of Indonesian dive travel and are experts at making arrangements to dive all over the Indonesian archipelago. Ken Knezick at Island Dreams Travel is experienced in all areas of Indonesian dive travel, (800) 346-6116. Poseidon Ventures Tours occasionally charters a ship from P&O Spice Islands Cruises and offers dive trips in the Banda Sea, (800) 854-9334. Boulder Adventures books land-based Indonesian adventure travel and occasionally books dive trips, (800) 642-2742.

For More Information

An invaluable source for information on diving throughout Indonesia is Kal Muller's Underwater Indonesia (Periplus Editions, 2nd ed., 1995).

over each dot of green land speckling the water, and the sea below is flecked with cloud reflections and line fishermen maneuvering small dugout canoes.

The point where we will dive is actually a sloping, sandy bowl guarded by sheer coral walls. Except for the bowl,

every inch of every surface is covered with life. There are no barren spots to perch on while photographing, few finger holes to grab onto and brace against the current. The water is so clear I can see the surprise on the divers' faces when they check their computers after we position ourselves on





the sandy slope. At 90 feet, we won't have a lot of time to photograph, no matter how astonishing this reef may be. Within a few minutes the parade begins: schools of black snapper, clouds of trevally, rolling

balls of barracuda, and large groups of pompano swim by, surrounding us in a glinting, swirling cyclone before vanishing into the blue. Our group is nearly frozen in place, staring wide-eyed, but I somehow manage to burn a roll of film before the last sleek pompano jets past us.

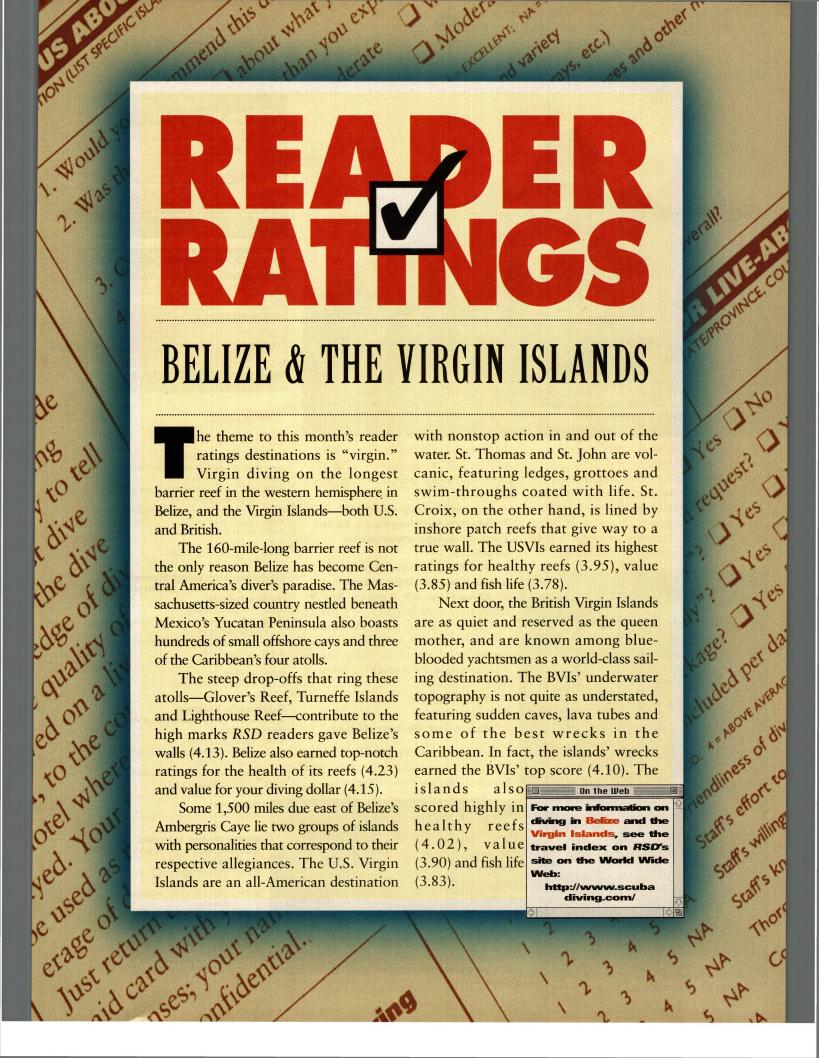
On the next dive, we follow the diversaster away from the point and

along one of the sheer walls that jut out from the bowl. We drop down past Day-Glo soft corals and fields of leather corals surrounded by transparent glassfish. And then I see what our guide wants to show us—row upon row of sea fan skeletons dusted with colonial anemones so white they look like freshly fallen snow. Small hawkfish rest on thorny oysters embedded in the thick coating of anemones woven around the dead fans. This is the magical layering of ocean life, species piled upon species, and dead animals providing a crucial substrate for the living reef.

An hour later, we're back on board and the crew consults the charts in preparation for our return crossing to the main anchorage in Laha Bay. Everyone gathers on the stern. Fish cartwheel across the still surface of the water and pastel strings of clouds knit sea and sky together. Dark lumps of islands melt into the Banda Sea and we are alone again, steaming through the Ring of Fire. •

The photography of Burt Jones and Maurine Shimlock, a husband and wife photojournalist team, is featured in their book, The Secret Sea (Fourth Day Publishing, 1995).





How We Got the Numbers

Reader rating forms were included in seven past issues, and were available to all readers, postage-paid. Ratings reflect the average scores on a scale of one to five: poor (1); below average (2); good (3); above average (4); excellent (5).

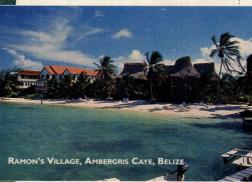


Dive Operators and Live-aboards

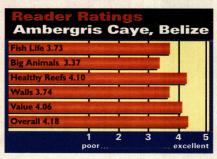
Dive operators were rated in seven categories:

- Friendliness of staff
- Staff's willingness to let you manage your own profiles
- Staff's knowledge and selection of dive sites
- Quality of boats Reader raters gave dive boats three separate scores, one each for condition of boat, space on board to gear up and amenities on the boat. These scores were averaged for a single "quality of boats" score.
- Rental gear
- **Facilities**
- Value for diving dollar

Live-aboards were rated in these categories (except rental gear and facilities), plus photography services.



Belize (overall) ig Animals 3.16 erall 4.13



Belize

Dive Operators

Belize Dive Center

SAN PEDRO • (011) 501-26-2777

- 4.53 friendliness of staff
- 4.15 staff's willingness to let you manage your own profile
- staff's knowledge and selection of dive sites
- 3.26 quality of boats
- 2.60 rental gear
- 3.75 facilities
- 3.92 value for diving dollar

Lighthouse Reef Resort LIGHTHOUSE ATOLL . (800) 423-3114, (941) 439-6600

- 4.36 friendliness of staff
- 4.72 staff's willingness to let you manage
 - your own profile
- 4 45 staff's knowledge and selection of dive sites
- 3.75 quality of boats
- rental gear 2.60
- 3.81 facilities
- 4.00 value for diving dollar

Ramon's Village AMBERGRIS CAYE • (800) 624-4215, (011)

501-26-2071

- 3.90 friendliness of staff
- 3.00 staff's willingness to let you manage your own profile
- staff's knowledge and selection of dive sites
- 3.11 quality of boats
 - 3.75 rental gear 3.56 facilities

 - 3.70 value for diving dollar

Rum Point Divers Stann Creek • (011) 501-62-3239

- 4.10 friendliness of staff
- **2.00** staff's willingness to let you manage your own profile
- 4.10 staff's knowledge and selection of
- dive sites
- 3.68 quality of boats
- rental gear 3.67 3.30 facilities
- 2.80 value for diving dollar



British Virgin Islands Dive Operators

Baskin in the Sun TORTOLA • (800) 233-7938, (809) 494-5854

4.80 friendliness of staff

staff's willingness to let you manage your own profile

4.80 staff's knowledge and selection of dive sites

3.93 quality of boats

4.33 rental gear 4.50 facilities

4.50 value for diving dollar

U.S. Virgin Islands **Dive Operators**

Low Key Watersports St. John • (800) 835-7718, (809) 693-8999

4.35 friendliness of staff

staff's willingness to let you manage your own profile

staff's knowledge and selection of dive sites

quality of boats

More Dive Operators The following operators did not receive enough responses for their ratings to be included:

BELIZE

Adventures in Watersports (800) 648-8990, (011) 501-26-3706 Amigos Del Mar

(011) 501-26-2706

Blue Hole Dive Center (011) 501-26-2982

Bottom Time Dive Shop (800) 382-7776, (713) 337-3758

Captain Morgan's (800) 447-2931, (218) 847-3012

Coral Beach Hotel

& Dive Club (011) 501-26-2013

du Ploov's (011) 501-92-3101

Frenchie's Diving Service (011) 501-22-2234

Journey's End Resort (800) 460-5665, (713) 780-1566

Manta Resort (800) 326-1724, (011) 501-32767

Nautical Inn Resort/ Nauti-One Dive Shop (800) 688-0377

Reef Divers, Ltd. (011) 501-26-3134 St. George's Lodge

(800) 678-6871, (011) 501-212121 **Turneffe Island Lodge** (800) 874-0118, (770) 536-3922

BRITISH VIRGIN ISLANDS

Blue Water Divers (809) 494-2847 **Dive BVI** (800) 848-7078, (809) 495-5513 Kilbrides Underwater (800) 932-4286, (809) 495-9638 **Underwater Safaris**

U.S. VIRGIN ISLANDS

Admiralty Dive Center (800) 524-7389, (809) 777-9802 **Anchor Dive Center**

(800) 537-7032, (809) 494-3235

(800) 532-3483, (809) 778-1522 **Cane Bay Dive Shop** (800) 338-3843, (809) 773-9913 **Chris Sawyer Diving Center** (809) 775-7320

Coral Divers at Coral Bay Watersports (809) 776-6850

Cruz Bay Watersports Co. (800) 835-7730, (809) 776-6234

Cruzan Divers (800) 352-0107, (809) 772-3701

Dive Experience (800) 235-9047, (809) 773-3307

(800) 524-2090, ext. 2144, (809)

725-6100, ext. 2144

Dive World (800) 467-0488, (809) 774-8687

Green Cay Divers (809) 692-9405

Paradise Watersports (809) 693-8690

Sea Trade Ltd. (809) 774-2001

St. Thomas Diving Club (800) LETS DIVE, (809) 776-2381

The Waves at Cane Bay (800) 545-0603, (809) 778-1805

4.00 rental gear

3.84 value for diving dollar

V.I. Divers

St. Croix • (800) 544-5911, (809) 773-6045

4.84 friendliness of staff

staff's willingness to let you manage your own profile

4 69 staff's knowledge and selection of dive sites

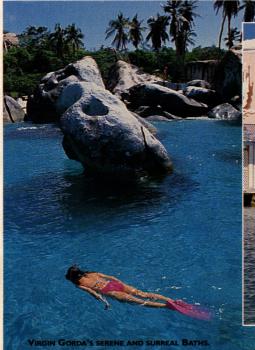
4.07 quality of boats

4.50 rental gear

3.92 facilities

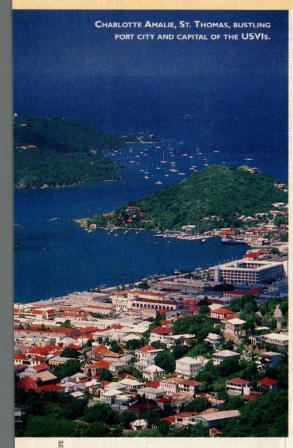
4.46 value for diving dollar







READER RATINGS





Belize Aggressor III (800) 348-2628, (504) 385-2628

4.62 friendliness of staff

4.83 staff's willingness to let you manage your own profile

4.64 staff's knowledge and selection of dive sites

4.58 quality of boat

4.35 photography services

4.56 value for diving dollar

Peter Hughes/ Wave Dancer

(800) 9-DANCER, (305) 669-9391

More Live-aboards

The following live-aboards did not receive enough responses for their ratings to be included:

BELIZE

Off Shore Express (011) 501-26-203 Rembrandt Van Rijn (800) 453-7245

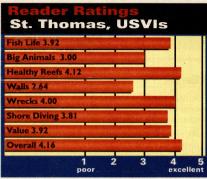
Tortuga Dive Centre (011) 501-26-2804

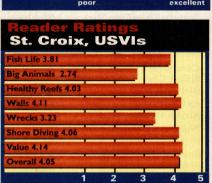
BRITISH VIRGIN ISLANDS

Yacht Promenade (800) 526-5503, (809) 494-3853

U.S. VIRGIN ISLANDS

Yacht TriWorld (809) 771-0164





4.80 friendliness of staff

4.94 staff's willingness to let you manage your own profile

4.83 staff's knowledge and selection of dive sites

4.83 start's knowledg

4.50 photography services

4.81 value for diving dollar

Trimarine/*Cuan Law* (800) 648-3393, (809) 494-2490

4.68 friendliness of staff

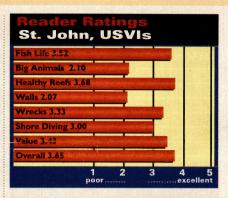
4.68 staff's willingness to let you manage your own profile

4.75 staff's knowledge and selection of dive sites

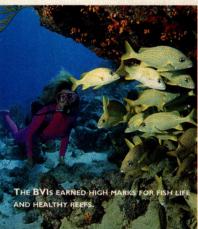
4.70 quality of boat

2.88 photography services

4.56 value for diving dollar







GREG JOHNSTON



RSD Gear Review

17 Spinsons Spinsons

IDI'S NEKTON 2000, THE #1 TESTER'S CHOICE SPECIALTY BC.

Back-buoyancy, integratedweight and tech BCs: New generation or new misdirection? by Jon Hardy

SEPTEMBER/OCTOBER . 61

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DACOR SOJOURN	В	No	Н	2	No	BRR	4	5	20-38	\$360	3			2	9
DIVE RITE TRANS PAC	В	D	S	OP	S	BRR	5	4	30-40	\$589	3	2	3	2	10
FORTÉ EQUIPOISE	J	DT	S	3	S	TRS	6	6	21-40	\$350	3				7
FORTÉ SIRENE	J	DT	S	1	S	TRS/ BRR	3	4	20-34	\$350	3	3		2	9
IDI ADVANTAGE	В	DT	S	4	S	BRR	L.	4	35-55	\$450	3		2		7
NEKTON 2000	J	DT	S	4	S	BRR	2	4	37-54	\$450	2				5
OCEANIC CHUTE I	В	DT	Н	2	Н	BRR	L	5	25-45	\$400	3		2		
OCEANIC TREND	В	No	Н	2	н	BRR	2	5	20-44	\$320	2		2		6
SCUBAPRO SEA HAWK	В	DT	Н	4	Н	BRR	L	4	32-72	\$624	2	3	2		9
SEA QUEST BLACK DIAMOND	В	D	н	3	No	BRR	1	5	36-40	\$575	3	2	3		9
SEA QUEST DIMENSION 3D	В	No	н	ı I	No	BRR	L	4	24-40	\$375	2		2		6
SEA QUEST DIMENSION XP	В	OP	н	2	No	BRR	2	5	24-40	\$420	3	2			
SEA QUEST QUICKDRAW	J	DT	н	2	No	BRR	3	5	23-42	\$450	2				5
U.S. DIVERS ALCYONE	В	D	Н	2	S	BRR	4	5	20-36	\$500	2				
U.S. DIVERS ALCYONE LITE	В	No	Н	No	Н	BRR	1	5	20-36	\$350	3	3			8
ZEAGLE CONCEPT	В	D	S	OP	No	BLR	13	5	42-44	\$488	2	2	2	2	8
ZEAGLE RANGER	В	D	S	3	S	BLR	13	5	44-65	\$629	2	2	3	1	8

SCUBALAB'S IN-WATER
EVALUATIONS OF 17 SPECIALTY
BCS INCLUDED OBJECTIVE
TESTS OF MECHANICAL
FUNCTIONS SUCH AS VALVE
FLOW RATE, AIR TRAPPING AND
INHERENT BUOYANCY.

CHART EXPLANATIONS

R/E = Remote Exhaust
OP = Optional

BRR = Bottom right rear BLR = Bottom left rear

TRS = Top right shoulder

SCORING SYSTEM:

- I = Outstanding
- 2 = Excellent to Good
- 3 = Adequate

Total score of 4 would be perfect.

Total score of 8 represents the performance norm for these BCs.

Note: For improved performance on many of these BCs, see individual comments.

MANUFACTURERS

Dacor (847) 446-9555 Dive Rite (904) 752-1087 Forté (800) 500-8292 IDI (800) 257-2822 Oceanic (510) 562-0500 Scubapro (800) 467-2822 Sea Quest (619) 438-I101 U.S. Divers (714) 540-8010

Zeagle (813) 782-5568

n case you haven't noticed, the jacket-style BC has been evolving, with better designs, better materials and more features than ever before. But that's not all—more of its buoyancy has been shifted to the rear, and some jacket BCs have added integrated weights. These features have found increasing favor in the technical

The result: Some industry members proclaim the age of back-buoyancy and integrated weights has arrived. Other equally experienced industry members pre-

dict the wave has crested and weight-integrated, back-buoyancy BCs will soon fade into obscurity along with horse collars and J-valves.

diving community.

We couldn't resist; we wanted to find out the truth for ourselves, to see what really worked and why. Here's what we found:

► BCs that look great but whose performance is merely average

► Inflator valves

and airways that look improved but perform poorly

► BCs that are hard to assemble and adjust

➤ Weights that are hard to ditch and that drop out when they shouldn't

Inappropriate use of tech BCs by divers who think bigger and black is better, but find out it isn't.

Sure, we found some excellent BCs with outstanding performance in certain aspects. Yet, as a group, these weight-integrated and back-buoyancy BCs are not nearly as well-designed as jacket-style BCs.

Testy, Testy

Selection criteria for the 17 BCs from nine manufacturers were simple: Each had to be back-buoyancy and/or weight-integrated. We tried to get all non-tech BCs, but the line is blurred and some of those reviewed here should be considered tech BCs.

Ergonomic testing—which tries to answer the question: how does it work when a diver actually uses it?—can be very subjective. Therefore, we used a team of seven test divers, all of whom followed

Model	Rank
IDI	- 1

iviodei	капк
IDI NEKTON 2000	1
SEA QUEST QUICKDRAW	2
U.S. DIVERS ALCYONE	3
OCEANIC TREND	4
SEA QUEST DIMENSION 3D	5

the same test regimen:

- ✓ Assembling and adjusting the BC without instructions
- ✓ Checking the size, fit, and comfort both in and out of the water
- ✓ Using the pockets and hose attachments, both in and out of the water
- ✓ Operating all valves in the water
- Checking attitude and stability in the water
- ✓ Loading and ditching the integrated weight system.

Each aspect was scored by each evaluator, totaled and averaged to provide an overall in-water score. At the same time, each evaluator made notes on particular

aspects of performance. The most significant and common of these observations are provided in the individual reviews that follow.

In-water evaluations also included objective tests of mechanical functions. The flow rate of each valve was tested, as well as air trapping, and inherent buoyancy was measured, all at 33 feet in open water. Our fundamental evaluative criteria were that (1) all deflate (exhaust) valves should flow faster than the power inflator and (2) there should be little or no air trapping or inherent buoyancy.

Out of the water, each component of every BC was evaluated for function and for performance as part of the whole BC. Much of this evaluation had to do with straps, adjustments, attachments, pockets, valve and hose positioning and weight system operation. We found that BC design engineers need to spend more time diving their BCs.

The results of some ScubaLab tests are reported only when significant variation was found. These tests include:

Total buoyant lift. Usually very close to manufacturer specs, but never exact due to the amount of handwork and flexible materials used.

Surface floating freeboard. All BCs we have ever tested provide adequate flotation if they are the correct size and the diver is weighted correctly.

Surface floating position. No BC we have ever tested has ever been able, by itself, to consistently float a diver face up.

Ascent control. Unless a BC actually fails by malfunction, which has happened, controlling ascents and bringing out-of-control ascents under control depends on the skill of the diver, depth of the test and valve function, which is scored in other places.

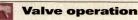
BCs IN REVIEW

humbs-up and thumbs-down icons indicate those performance aspects that were *significantly* better or worse than the average.

Dacor Sojourn



Assembly and adjustment



Dacor's BCs are mostly of the jacket, nonweight-integrated type. The Extreme, Chameleon and Nautica have all been

> Tester's Choices, while the Enduro has also done very well. But Dacor has branched out, now offering The Rig, a true tech BC, and the model we tested-the Sojourn. This is a new backbuoyancy BC intended for use by the traveling diver. During

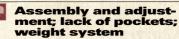
ocean tests, it proved to be easy to assemble and adjust. Valve performance was its weakest area. The newer valve and airway system doesn't perform as well as the generic inflators used by Dacor in the past.

Dive Rite Trans Pac



DACOR SOJOURN

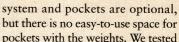
Attitude and stability; instructions; versatility



The Trans Pac is possibly the most flexible

and versatile BC available. It can be anything from a travel BC to a tech BC with interchangeable air cells that provide 30, 45, 55, 60 and 85 pounds of lift. It is extremely stable under water and has the best set of instructions going. But the new inflator/airway system does not perform as well as the generic one used in the past. The weight





the Trans Pac with weights, and it scored lower than it did during 1995 tests with pockets and no integrated weights. However, the Trans Pac's weight system still loads and ditches better than several other BCs evaluated here.

Forté Equipoise and Sirene



Pockets and valve operation



Sizing; stability; weight system

These two very different BCs share the same strengths and weaknesses. In a world of poor BC pockets, the pockets on these BCs are excellent. Air trapping is as close to zero as possible, and the shoulder dumps are extremely efficient. During ergonomic testing, valve performance was excellent on both BCs. During mechanical valve flow tests, the Equipoise was outstanding, but the Sirene was inconsistent, resulting in a lower score.

Both BCs are oversized, so you may need one size smaller than you think. When

the weight system is used to capacity, including trim weights, there is a tendency for the diver to turn turtle under water. Also, at max capacity, the weights tend to fall out unexpectedly. We recommend using the weight system with a light load in both the ditchable and trim





weight pouches. This change improves the performance and scoring of both BCs.

Although the Sirene is made especially for women, we had male divers also test this BC. They scored it consistently lower than the female divers did, confirming that it is indeed best suited for women. We also analyzed the ergonomic scores given by female testers to the Tester's Choice BCs in this article, and then compared those scores to the female ergonomic scores for the Sirene. All Tester's Choice BCs had ergonomic scores equal to or better than the Sirene's, demonstrating that there is more than one way to provide proper buoyancy control for women.

IDI Advantage

Valve operation; attitude and stability

Assembly and adjustment

IDI Nekton 2000

Valve operation; attitude and stability; pockets; sizing, fit and comfort

Assembly and adjustment

Although the Advantage and Nekton 2000 share a number of features, the Advantage is intended for tech-type diving, while the Nekton 2000 was the top performer in this test group, earning it the number one spot on the Tester's Choice list. Assembling

and adjusting these BCs is complex, but results in excellent sizing, fit and comfort, particularly on the Nekton 2000. Both BCs have excellent attitude and stability. Both have a simple provision for adjusting the top tank band of the soft pack, making it possible to prevent the wobble common with soft packs and providing enough vertical adjustment to keep the tank valve from hitting your head. This is a first in soft packs.

Typical of tech-type BCs, the Advantage is harder to use and less comfortable than mainstream BCs. Its weight system is not as refined as the Nekton's, which has been improved significantly since we first tested it. Both BCs work better with a light load in the weight pouches. The

DI ADVANTAGE



instruction manuals have been significantly improved.

Oceanic Chute 1

Valve operation; attitude and stability; sizing, fit and comfort

Weight system

Oceanic Trend

Assembly and adjustment; valve operation; sizing, fit and comfort

Pockets

Again, these are two very different BCs, with the tech-type Chute 1 not faring as well as the travel-type Trend, due primarily to the (Continued on page 66)

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BUYER'S GUIDE: THE CHANGING BC

Ithough BCs with weights and backbuoyancy are not as well-refined as jacketstyle BCs, they deserve serious consideration because they can be the best BCs for certain divers and diving activities—if you know what to look for.

Assembling and Adjusting. Be careful here: Currently there are many different and complex methods used, particularly for the semi-permanent adjustments made to customize the BC to your body. With rare exceptions, tank bands are still too complex to thread and therefore may not be secure. Again with rare exceptions, hard packs are more stable and have better vertical adjustment than soft packs.

Carrying Handles. Only the smooth hard plastic ones are sturdy enough to lift the BC when it's on a tank. Most soft straps are suitable for positioning the BC on the tank or hanging the BC up, but are not meant for lifting and carrying the BC on a tank.

Fit and Comfort. Get a size that fits you well, as this has a major impact on how well the BC will perform. Depth-compensating straps and cummerbunds are good, as well as free-floating straps that allow air cells to move out and away from your body. Back-buoyancy reduces or eliminates squeeze from the BC air cell. Because many BCs are oversized, you may need a size smaller than you think or have been told. Do not compromise on fit.

Pockets and Attachments. For most divers, pockets are the best place to carry small and needed items. However, most pockets are still too difficult to open and put a hand into often they are too far back to be effective. Hose attachments often obstruct pocket openings. Plastic "C" clips work better than the plastic "U"-shaped clips.

Valve Operation. A number of manufacturers have changed the oral/power inflate/deflate valves to be smaller, more streamlined and look different from others. Too often, function has

been sacrificed for appearance. These valves have a major impact on your ability to control buoyancy. The appearance, feel and position of each should be different. Each should be easy to find, grip and activate. Oral inflators should be easy to place on or in your mouth for use. Primary remote exhausts need to be at the highest point on the BC when in the swimming position: if not, they cause air trapping. They should also be easy to find. A secondary remote exhaust should be on the bottom right rear of the BC for easy use when swimming head down. It should have a pull cord that is easy to find and use.

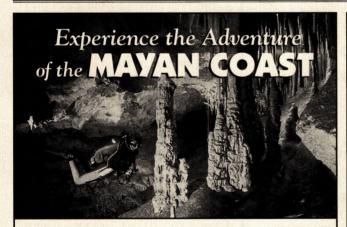
Attitude and Stability. BCs should allow you to swim under water in the prone position with no tendency to roll you over and also allow you to swim comfortably on your back on the surface. To know this, you must try the BC in the water.

Weight Systems. Have become so diverse that your buddy or dive leader may not know how they function. In gen-

eral, if you use a "light load" of weight in an integrated system, weight ditching and security will be better, the BC will fit better. assembly will be easier, attitude and stability improved, and pockets easier to use. To enable yourself to use a lighter load in an integrated weight system, you can dive the tropics (where less weight is needed) or use negatively buoyant tanks, ankle weights, trim weights in the BC or on the tank, and a lightly weighted belt. Ideally, you should have enough ditchable weights in your BC or on a belt so you can become positively buoyant under any diving conditions you may encounter.

Dealer Prep. Once you have selected the best BC for you, go over all assembly and adjustment procedures and be sure you can do them; have the store install the new BC's low-pressure inflator hose on your regulator, and be sure you receive complete verbal and printed instructions as well as your warranty.

Note: These selection steps, dealer preparations and warranty service are not available if you purchase your BC by mail order.



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(Continued from page 64)

weight system. The Chute's weight ditching is not natural or user-friendly and requires too long a pull to be effective. On the positive side, the use of Oceanic's Bioflex/Kevlar material for the Chute's air cell provides greater stretch, allowing greater inflation in the same space.

Both of these BCs arrived for testing with an older version of the inflator and airway system that did not perform as well as it should. The new and current inflator/airway was installed and the tests were outstanding. This improvement is in contrast to "improvements" by other manufacturers that in reality have degraded valve performance. The Trend made the Tester's Choice list for this test group, as the Oceanic Ocean Pro V did during other BC tests.

Scubapro Sea Hawk



Assembly; pockets; valve operation



Weight system

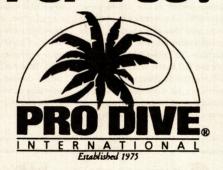




The Sea Hawk is a new offering by Scubapro for the tech diver. It comes with Scubapro's Super Cinch to attach the BC to the tank, which is easier to use and more secure than any other tank band we have ever tested. The balanced inflator/oral valve and remote dump are the easiest to use and most efficient of any valves we have ever tested and received outstanding scores on ergonomics. Due to the size and shape of the Sea Hawk and the position of the valves, however, the flow rate and air trapping scores were not as good.

The Sea Hawk has interchangeable air cells that offer 32, 48 and 72 pounds of lift. The trim weights are optional, while the large-capacity integrated weight system loads from the top for soft or hard weights. The angle of pull needed on the weight release is unnatural and not self-evident. The owner's instructions recommend that you not use the Sea Hawk with a separate weight belt as it may interfere with dropping the integrated weights. This would be a limiting factor for light loading and using weight distribution to improve performance.

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Sea Quest Black Diamond



Assembly and adjustment, weight system



Sizing, fit and comfort; pockets; Trimline airway



two 6-pound weight pouches, although the angle of pull to ditch these is not as good as on other Sea Quest BCs.

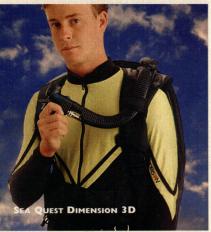
The Quickdraw is a fine example of Sea Quest quality; with simple, comfortable and stable performance, and a well-designed weight system. As is often the case, pocket function suffers on this weight-integrated BC as the weights take up part of the best location for pockets. With our recommendations below on valve changes, this is clearly an outstanding performer.

ScubaLab recommends two changes

to potential buyers to make these Sea Quest BCs even better:

(1) Equip them with the older Combo airway rather than the newer Trimline airway. The airways cost the same, but the Combo performs better.

(2) Have the optional secondary remote exhaust on the bottom right rear installed; this is easy to do and inexpensive, plus it will be a convenience whenever you need to dump air in the head down position. Starting in late 1996, the remote exhaust valves will become stan-



Sea Quest Dimension 3D

- Assembly and adjustment, pockets
- Sizing, fit and comfort;
 Trimline airway

Sea Quest Dimension XP

Assembly and adjustment

Trimline airway

Sea Quest Quickdraw

Assembly and adjustment; sizing, fit and comfort; attitude and stability; weight system

Pockets; Trimline airway

The Black Diamond is a tech BC and, as with all other tech BCs, does not fit as well and is more difficult to use than standard BCs. It runs oversized, has less padding and tends to slide on your back. It can accommodate 32 pounds of weight and is made of ballistic material.

The Dimension 3D has been in the Sea Quest line for some time and has undergone several design changes. It has an excellent range of adjustment and is easy to assemble. This BC's pockets work very well, but the harness is not as comfortable as it was in past tests.

The Dimension XP is a clean, simple variation on a theme with an option for



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CIRCLE NO. 36 ON READER SERVICE CARD

dard on these Sea Quest BCs.

U.S. Divers Alcyone

Sizing, fit and comfort

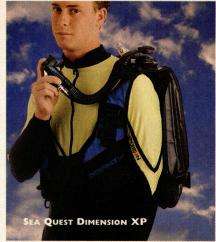
Weight system

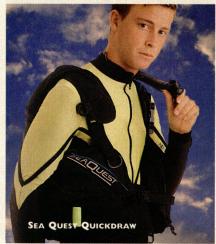
U.S. Divers Alcyone

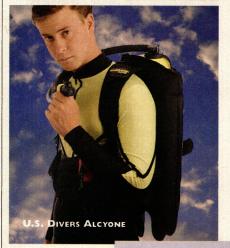
Assembly and adjustment, attitude and stability

Lack of pockets; valve operation

These two Alcyone BCs are cut from the same cloth, but perform very differently. We have tested the Alcyone several times over the years and its continued improvement makes its Tester's Choice award well-deserved. In fact, its scores for assembly and adjustment, valve operation, attitude and stability were very close to its best score in sizing, fit and comfort. Its weight system is of limited capacity, only five pounds per side, so it would only work in the tropics or with an additional belt. The weight can







also slip out. The Alcyone would make an excellent traveling BC.

The Alcyone Lite is a strippeddown, less costly version, without weights or pockets. Although the same valves are Sergio Angelini Jon Hardy Jason Manix Paula Pearson **Pete Pehl**

Test Team Divers

Lorraine Sadler Laura Young

used, the deflate flow rates are slower, making this BC harder to use. Different



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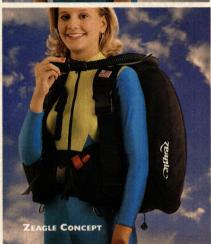
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air cells of 20, 26 and 36 pounds of lift are available for both of these BCs.

Zeagle Concept and Ranger

Sizing, fit and comfort; valve operation; attitude and stability; customizing

Weight system

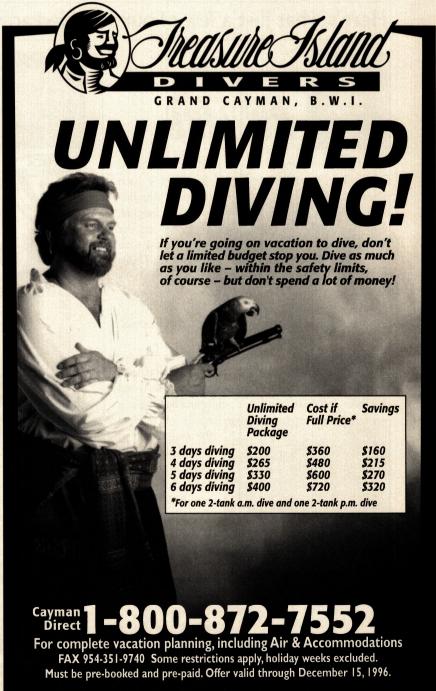
The ergonomic scores on valve operation for these Zeagle BCs are far better than

the mechanical test results for valve flow rates and air trapping. Trapping can occur when the position of the valve attachment points and the flexibility of the BC material do not allow best flow during mechanical tests where valves are operated at maximum flow, as opposed to human tests where the valves are operated for shorter durations during normal buoyancy control.

These Zeagle weight systems are easy to load and ditch—all weights ditch with one pull to a single handle—but they are

also the most difficult to reassemble after ditching. Zeagle also offers a velcro weight system that is easier to reassemble, but requires two hands to ditch and does not ditch as well. Both of these weight systems are available on all Zeagle BCs. The Ranger is a sound, quality BC that has made Tester's Choice in past BC evaluations, but now the competition for this type of BC is much greater from other manufacturers.

Jon Hardy is director of RSD's ScubaLab facility on Catalina Island, Calif.



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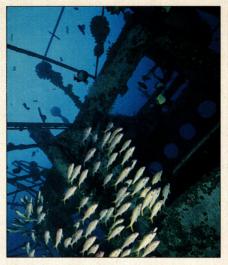
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ctive volcanoes and coral-encrusted subsea geological formations are just the beginning of Hawaii's spellbinding story. Throughout the islands, the flavor of Polynesia prevails: festive luaus and fragrant flower leis are just the most obvious manifestations of the rich culture that runs through to the islands' core. On land, green rolling hills, virgin rain forests, thundering waterfalls, steamy black sand beaches and smoking volcanoes all vie for visitors' attention. Under water, a completely different world unfolds.

The Hawaiian Islands, stretching like a string of jewels across the Pacific, are products of violent volcanic upheavals. During their creation, fiery steam trapped within molten lava under the surface of the sea created an extraordinary labyrinth of tubes, archways, caverns and caves. Time and evolution have transformed Hawaii's unusual underwater canvas into a kaleidoscopic master-



piece, carpeted with corals and packed with fish and invertebrate life. Add turtles, manta rays, dolphins and humpback whales to the equation and you get one of the Pacific's hottest dive destinations.

The largest and youngest island in the chain is Hawaii, known to most as "the Big Island." Hawaii is still in the midst of creation and the active volcano on Hawaii's east side is the most popular topside attraction. Hawaii's diving takes place from the western shore, off Kona, where sunny days abound and visibility is commonly in excess of 100 feet. Unusual lava formations stretch along the coast creating a wealth of sites to choose from. Kona's biggest claim to fame is the **Manta Madness** night dive, which can be done from boat or shore.

Next in line moving northward up the chain is magical Maui. The main town of Lahaina, once a booming whaling town, is today a bustling hub of tourist activity. Artsy boutiques and tantalizing restaurants line the seaside strip. Those who like things on the quiet side may prefer Kihei, a quiet island town with spectacular beaches and dazzling scenery. Maui offers a diverse range of diving opportunities encompassing sites off the nearby island of Lanai, Molokini Crater and the West Maui coastline. The most stunning formations are found off Lanai where streams of light pour through enormous chiseled windows at First and Second Cathedrals. The marine preserve at Molokini Crater is one of the best spots



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to observe Hawaii's varied marine life, and sites along the coast offer a potpourri of surprises. Charters depart from both Lahaina and Kihei.

For those who want to enjoy the laid-back lifestyle of the islands but don't want to miss out on the nightlife, there's Oahu, the most cosmopolitan of the Hawaiian Islands. Grand hotels, beautiful beaches, exotic shows and great shopping combine with incredible diving to provide something for everyone. Oahu's two wrecks are the biggest underwater attractions. Most popular is the YO 257 (a.k.a. the Atlantis Wreck), located just minutes off Waikiki's shore. This 174-foot retired Navy oiler, sunk in 1989, has been transformed by the sea into a festival of life. The Atlantis Wreck's largest visitor is the Atlantis Submarine; sub rides are coordinated with scheduled dives so divers and their non-diving friends can rendezvous underwater. The 165-foot Mabi is one of the most prolific reefs on Oahu, providing shelter for eels, sharks, rays and myriad fish and marine critters. On the dozen or so other reefs around the island, the fish life is equally astounding and there are always plenty of turtles. Oahu has one of Hawaii's largest and healthiest green sea turtle populations.

The northernmost island is Kauai, the "Garden Island," best known for its stunning greenery, dense rain forests and gushing waterfalls. Kauai is the oldest of the inhabited islands and extensive growth is evident above and below. Under water, overlapping layers of corals and sponges blanket the bizarre lava landscape, while fish and critters jam the reefs' cracks and crevices. Although Kauai's reefs are among the prettiest in Hawaii, the friendly green sea turtles have made the island famous.

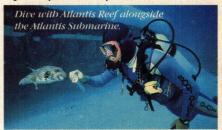
The best thing about Hawaii is that it's only five hours from Los Angeles. You can enjoy all the charms of a South Pacific holiday and avoid the hassles of international travel. All flights from the states enter through Oahu and local airlines provide convenient inter-island service. Try one or try them all, you're sure to be back for more. Aloha.

ATLANTIS REEF

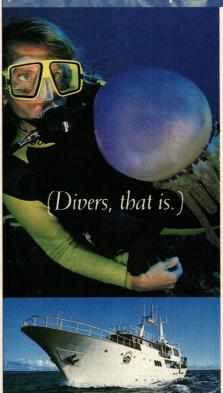
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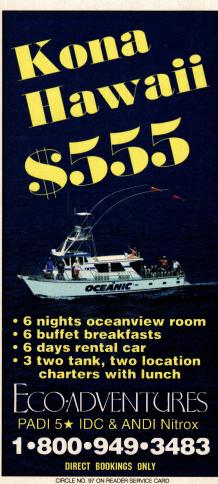
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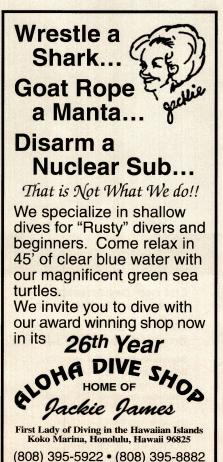
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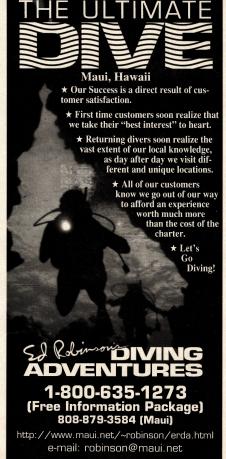
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New BCS, New Toch

Twenty-one tips to make the most of today's buoyancy compensators. by JON HARDY

cuba diving is an equipment-intensive activity in which performance is largely measured by your skill at using specialized gear: a mask to see, fins to move, a regulator to breathe. But the most complex piece of equipment, by far, is the BC. When used properly, it allows us to move efficiently under water, use less air, control position and attitude in the water with neutral buoyancy, control ascents and descents, offset buoyancy losses, attach tanks and other gear, and provide positive buoyancy on the surface.

It's no wonder that the continuing evolution of BCs has caused a significant gap between new technology and new dive techniques to match. Many BCs have have shifted buoyancy to the back, either completely or partially. Quite a few offer a way to integrate weights into the BC. Not all of these changes are necessarily improvements, so it is essential that divers know which BC works best for them and how to use it.

Before You Get Started

Be sure your BC fits correctly. ScubaLab tests have repeatedly shown that if a BC is uncomfortable and ill-fitting, it will not perform as intended. Also ensure that it has the correct amount of buoyant lift. Having enough lift, but not too much, is also important to BC performance. There

Suggested Ranges of BC Lift Capacity

Tropical diving

(with little or no wetsuit protection)
12 to 24 pounds

General recreational diving

(with a full wetsuit or dry suit)
20 to 40 pounds

Technical diving

(or other more demanding dive conditions)
40 to 80 pounds

is no magic formula for calculating how much you need, but the key criteria are clear. A BC should have:

- ► Enough buoyant lift to meet the demands of the most severe diving you intend to do.
- ► Enough lift to keep your head and face clear of the water when resting on the surface.
- ► Enough lift so that you don't have to inflate the BC more than a third to half full to become neutral at depth, thus preventing BC squeeze and ensuring ample reserve buoyancy for emergencies.
- ► Enough lift to exceed the combined in-water weight of your full tank and weights, so that you can become neutral regardless of wetsuit compression.

Going Down Easy

If you are correctly weighted (able to perform a safety stop with 500 psi at 15 feet with no air in your BC), you'll be able to glide to the bottom by simply dumping air from your BC, exhaling and relaxing (no kicking) to start a feet-

Techniques





IF HIP WEIGHTS (LEFT) CAUSE
DISCOMFORT FOR YOU, TRY A
WEIGHT-INTEGRATED BC.
BOTH YOU AND YOUR
EQUIPMENT WORK BETTER
WHEN YOU SWIM WITH YOUR
HEAD SLIGHTLY UP.

first descent.

▶ Although the easiest way to clear your ears and control your BC during descent is to keep your head up and your feet down, you'll soon want to switch to a horizontal position so that you can see beneath you and be prepared to level off and swim. BCs make this easy—just add air in small increments to offset negative buoyancy as your suit compresses.

► In a head-down position, the oral deflate and primary remote exhaust will not work, which is why most BCs now have a secondary remote exhaust at the bottom

rear that works in this position. You need to be familiar with your gear so you can find and use this valve without hesitation.

► If you add too much air and your descent starts to reverse into an ascent, simply exhale and dump some more air.

Neutral Buoyancy

This is one of diving's most important skills. A neutral, relaxed diver is efficient, uses less air, and avoids damage to self, the environment or a buddy. Perfect neutral buoyancy is difficult to maintain, particularly when diving with a wetsuit,

because minor depth changes alter both the suit's and the BC's compression. One school of thought says that if you can't be perfectly neutral, aim for being slightly positive. Another school says slightly negative is better. Actually, both work, so go with what is best for you. To stay as neutral as possible:

► Be aware of your surroundings, particularly your depth and body position.

► Keep your inflate/deflate valve positioned where you can easily find and use it without looking. If you are ever unsure of what button you're pushing,

WEIGHT-INTEGRATED BCs

advantages

- ► Takes weight off hips for more comfort, particularly for women
- ► Can be used to eliminate or reduce weight belt needs
- ► Puts most key scuba equipment items into a coordinated system
- ► Can be used to augment a weight belt when a great deal of weight is needed, as with a dry suit
- ► Use of weight pouches and top loading has significantly improved these systems, allowing divers to remove or replace weights while in or out of the water
- Can be used as part of a weight distribution system including belt, trim, ankle and integrated weights

disadvantages

- ► Other divers may not know how the system works
- ► At full capacity, some systems are not secure
- ► Some systems are difficult to ditch
- ► Weight positioning is limited by the position of the pockets or pouches
- ► Added weight makes the system hard to lift and handle on the surface, also more difficult to put on ► Some systems have a tondency to turn the divergence.
- ► Some systems have a tendency to turn the diver turtle when under water
- ➤ Some weights will not fit these systems
- ► Some systems will ditch only when the diver is near the vertical position

BACK-BUOYANCY BCs

advantages

- Little or no squeeze when fully inflated
- ► Can accommodate greater size variations with correct fit
- ► Clears the chest area, better appearance for photos and often more comfortable
- ► Floats you higher out of the water when on the surface
- ► Tends to position diver in the normal underwater swimming position

disadvantages

- ► Tendency to push you face forward at the surface
- ► More difficult to change positions on the surface
- ➤ Often lacking good pockets or hose attachment points

TECHNICAL BC

advantages

- ► Has more attachment points and stainless steel D-rings
- ► Both back-buoyancy and weightintegrated
- ► Uses heavier materials and/or double bag construction
- Has greater buoyant lift
- ► Provides for the use of double tanks
- Comes equipped with or has provisions for installing redundant air cells and/or inflators

disadvantages

- ► Less likely to fit well, often oversized
- ► Less comfortable with less padding
- ► More difficult to control buoyancy and ascents due to higher lift capacity
- ► Larger and bulkier, causing increased drag in the water
- ➤ Often more difficult to change position from front to back
- ► Costs more



hold it in your field of view when using it.

- ► Use your inflate/deflate judiciously, making small adjustments and giving them time to take effect.
- ► Fine-tune your buoyancy with lung volume. Simply changing the size of a breath can alter buoyancy by two to four pounds.
- ► In most open-water situations, try to swim with your head slightly up and your feet slightly down; both you and your equipment work better in this position. You may need to swim head down, feet up in some environments where your fins could cause damage or stir up the bottom.

Safe Ascents

Power inflators were originally feared by some divers who believed they might be rocketed to the surface at dangerous speeds. As a result, conventional wisdom held that you should be neutral until time to ascend, then dump all the air from your BC and swim up against negative buoyancy. Diving technique and understanding have come a long way, but there are still dinosaurs out there who dive this way. Unfortunately, some of them are instructors. What makes best psychological and physiological sense is to reduce your stress as much as possible during the entire ascent. To do this:

- ► Stay neutral throughout the ascent with buoyancy control.
- ► Hold your inflate/deflate valve in your field of view so you can see if air is going in or out of the BC.
- ► Ascend slowly, 30 feet per minute or less, using a dive computer to monitor ascent rate.
- ► Pause at 15 feet to make a safety stop, but also to be sure you are under

control and the surface is clear.

► Kick only to maintain your vertical position and let expanding air gently aid your ascent.

On the Surface

Good divers spend as little time on the surface as possible, yet there are times when surface swims and rest breaks are necessary, or problems are best solved at the surface. In these cases:

► A properly weighted diver with a

correctly fitting BC can float easily on the surface. It should not be necessary to fully inflate the BC; in fact, BCs are often less comfortable and may restrict breathing when fully inflated.

➤ Surface swimming is easier on your back with a partially inflated BC, so your lungs are at or above the waterline (breathing is easier without water pressure on your chest), and without a snorkel (snorkels increase the work of breathing more than regulators).



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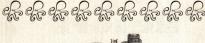


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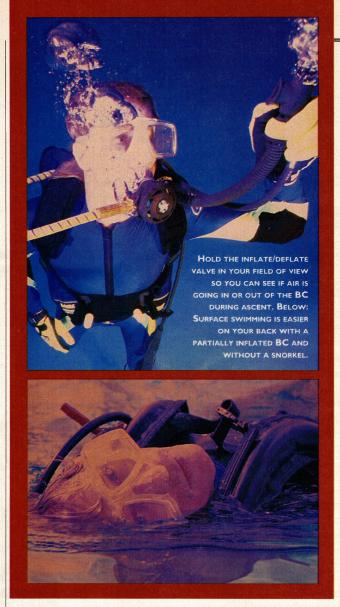
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► When swimming on your back, know where you are headed. You can do this by using a landmark behind you, using your compass in reverse, alternating with your buddy or looking over your shoulder once in awhile.

Face-Up Floating

For years, the controversy has raged: BCs should float you face-up on the surface, but they don't. Should you care?

Those who worry about these things say if you arrive at the surface unconscious, you must float face-up to survive. Yet our tests show that, even if you arrive face-up, your mouth may not be out of the water and your airway may not be open. Unless your buddy or a rescuer is close enough to increase your buoyancy, ditch gear and assure an open airway, there is little hope you would survive anyway. In addition, no BC we have ever evaluated will consistently float you face-up. In fact, our tests show that face-up

floating occurs only 45 percent of the time. As a result:

- Consistent face-up floating is not a viable option. Given the current state of the art, a BC and weight system that assures face-up surface floating (by putting more weight in the rear) also has the worst underwater stability and performance.
- ► Use of small trim weights near the rear to offset the positive buoyancy of empty aluminum tanks and balance the scuba unit is appropriate.

When Things Don't Work

BCs can help you deal with emergencies, or better yet, keep difficulties from becoming an emergency. By using continuous buoyancy control

and staying neutral, you're ready to take action if needed:

- ► Remember, if you can't readily solve a problem under water, get positive on the surface. As you will have at least a small amount of air in your BC, an ascent will increase your buoyancy and help you on your way to the surface.
- ▶ Use your BC to achieve positive buoyancy instead of ditching weights when there is a problem, not a fullblown emergency. Positive buoyancy can come from the BC, suit expansion, weight ditching or a combination of these.
- ► In low or out-of-air situations, a power inflator works at a lower tank pressure than a regulator, so you can still power-inflate your BC, but at a rate slower than normal.

Jon Hardy is the director of RSD's ScubaLab. See page 61 for ScubaLab's review of new BCs.

How to Choose the Right Lens

Text & Photography by Franklin J. Viola

amera lenses are a photographer's primary tools. They come in a variety of focal lengths and light-gathering dynamics—short or long, fast or slow, fixed or variable-and each is designed to perform a specific function. That's not to say that a lens created to photograph a tiny nudibranch can't be used to capture a school of fish, but knowing the strengths and limitations of each lens in your system will make it easier to choose the right lens for the shot you're after.

Basic Choices

Generally, lenses used for underwater photography are grouped into two categories: wide-angle and macro (which

includes close-focus telephotos). However, to get the best performance out of a lens, it's important to further separate them by their angles of coverage and the subjects that best fit into their frames.

Super Wide-Angles

These are the fish-eye lenses. They include the SLR 16 mm, Nikonos RS 13 mm and Sea & Sea 12 mm SWL (Nikonos). They feature ocean-encompassing angles of coverage—180 degrees,

170 degrees and 167 degrees, respectively—and tremendous depth of field even when set at f/4. Fish-eye lenses allow photographers to shoot large subjects such as panoramic reef scenics and shipwrecks at very close distances. Fish-eye lenses are favored by professional underwater photographers because they can make inches of visibility in dirty water look like many feet of clear water.

However, images shot with fish-eyes require much more attention to composition and lighting. The key to shooting super wide-angles is to get close, then get even closer. Due to



From fisheye to macro, whale sharks to sea slugs, how to choose the right tool for the job.

their extreme angles of coverage, it's important to check in the camera viewfinder for stray cords, limbs and fins. Finally, a minimum of two wide-angle strobes (placed well behind the front of the lens) are usually required to light subjects shot with a fish-eye.

Wide-Angles

These are the lenses most underwater photographers choose for reef vistas with or without

divers, close-focus wide-angle images, and large fast-moving subjects like whales and dolphins. They include the SLR 14 mm, 18 mm and 20 mm, Nikonos 15 mm, Sea & Sea 15 mm WL (Nikonos) and Sea & Sea 16 mm (Motor Marine II-EX). Their respective angles of coverage are 114 degrees, 100 degrees, 94 degrees, 94 degrees, 96 degrees and 91 degrees. Like their fisheye cousins, they too have extraordinary depth of field when set at f/4. The key to shooting wide-angles effectively is to get close, use one or two wide-angle strobes and avoid capturing unwanted matter in the corners of the picture frame.



Medium Wide-Angles

For portraits of divers or large creatures such as groupers and turtles, an SLR 24 mm or 28 mm, Nikonos 20 mm, Sea & Sea 20 mm WL (Nikonos) and Sea & Sea 20 mm (Motor Marine II-EX) will do the job quite nicely. While their angles of coverage are not as extreme (84 degrees, 74 degrees, 78 degrees, 80 degrees and 80 degrees, respectively), they do allow photographers to get close without being in a subject's face. Medium wide-angles are also perfect for photographing large subjects that may be difficult to approach, like hammerhead sharks. Such subjects will fill the frame instead of looking like a goldfish as they would in a wide-angle lens. Due to the virtual or apparent image created by a housing's dome port, SLR shooters may find using a +1 or +2 diopter in front of their medium wide-angle lens will bring the focus in closer without losing the ability to focus near infinity.

Standard Lenses

On land, these lenses would be considered wide-angle. But in underwater photography, the SLR 35 mm, Nikonos RS 28 mm, Nikonos 28 mm and 35 mm, and Sea & Sea 35 mm (Motor Marine II-EX) are quite standard. Their angles of coverage (62 degrees, 59 degrees, 46 degrees, 59 degrees and 46 degrees, respectively) are

good for profiles of angel fish, lionfish and head-andshoulder shots of divers. Too often, novice shooters use a standard lens to photograph large subjects that for best results require a wide or medium wide-angle lens. For a large subject to fit in the frame, the photographer must increase the amount of water placed between the camera and the subject. The resulting image is usually less sharp and less colorful.

The SLR 35 mm and Nikonos RS 28 mm can focus quite close, allowing for excellent shots of an

entire sea anemone filled with clownfish. But the Nikonos 28 mm, 35 mm and Sea & Sea 35 mm are limited to minimum focusing distances of two feet and more. These lenses also have a relatively narrow depth of field.

Focusing a standard SLR or RS lens is quite simple. For those shooting viewfinder cameras (Nikonos V or Motor Marine II-EX), achieving sharp focus while accurately framing the subject is much more difficult. The key to shooting standard viewfinder lenses under water is finding the perfect distance from your subject—not too close and not too far away. The best images are usually produced with a camera-to-subject distance of no less than three feet and no more than four feet. A good way to train your eye to estimate three feet under water is to hold the camera in your right hand, and a one-inch-diameter by four-foot-long PVC pipe in your left hand (16 inches equals one foot under water due to water's 25 percent magnification). Aim the camera at a subject and then measure (with the pipe) the distance from the film plane to the object. With practice, you will be able to estimate three "underwater" feet within a few inches without the pipe.

Macro

Telephoto (macro) lenses used in underwater photography need less than half the

LENS TYPE	LENSES	SUBJECTS	
SUPER WIDE-ANGLE	SLR (dome port): 16 mm Nikonos III, IV, V: Sea & Sea 12 mm SWL Nikonos RS: Nikonos 13 mm	Panoramic reef scenics, wreckscapes and whale close-ups.	
WIDE-ANGLE	SLR (dome port): 14 mm, 18 mm, 20 mm Nikonos III, IV, V: Nikonos 15 mm, Sea & Sea 15 mm WL Motor Marine II-EX: Sea & Sea 16 mm	Reef vistas, wrecks, whale sharks, reef and diver, and close-focus wide-angle shots.	
MEDIUM WIDE-ANGLE	SLR (dome port): 24 mm, 28 mm Nikonos III, IV, V: Nikonos 20 mm, Sea & Sea: 20 mm WL Motor Marine II-EX: Sea & Sea 20 mm	Portraits of divers, close- ups of big fish like groupers, and hard-to- approach larger creatures from a medium distance.	
STANDARD LENSES	SLR (dome port): 35 mm Nikonos III, IV, V: 28 mm and 35 mm Nikonos RS: 28 mm Motor Marine II-EX: Sea & Sea 35 mm	Smaller fish such as puffers and angelfish, head-to-shoulder portraits of divers.	
MACRO	SLR (flat port): 60 mm, 105 mm Nikonos RS: 50 mm Nikonos III, IV, V: extension tube set or close-up kit Motor Marine II-EX: 2T or 3T macro lens	Nudibranchs, clams, flamingo tongues, fish faces, coral patterns, shrimp, small crabs, tree worms, cup corals.	
ZOOM	SLR (dome port and +4 diopter): 18-35 mm, 35-70 mm, 28-85 mm and others Nikonos RS: 20-35 mm	Anything from reef scenics to angelfish, but primarily used as a "hunting lens."	

PHOTOGRAPHER'S TOOLBOX

SEA & SEA 12 MM FISH-FYE

Until recently, the only way to shoot with more angle of coverage than a Nikonos 15 mm lens (94 degrees) was to use a housed SLR camera. Sea & Sea has changed that by introducing a 12 mm fish-eye lens developed exclusively for Nikonos cameras. Constructed of nine elements in six groups, it offers a remarkable 167 degrees of coverage. The 12 mm fish-eye has a maximum aperture ratio of f/3.5, weighs just 20 ounces and has a minimum focus distance of 11.8 inches with depth of field down to approximately 4.8 inches at f/22. The lens is a rectilinear fish-eye, meaning that it yields a flat rather than a circular image. The 12 mm fish-eye produces good color saturation, excellent image resolution and is compatible with all TTL functions of the Nikonos V.

Sea & Sea also produces an accessory optical viewfinder for use exclusively with the 12 mm fish-eye. The viewfinder provides 90 percent frame coverage and features a double-lock mechanism to mount securely on a Nikonos.

For more information about the 12 mm fish-eye or other products, call SEA & SEA at (619) 929-1909.

distance of the 300 mm and 500 mm lenses used by terrestrial wildlife photographers. Macro lenses are often longer in focal length than standard lenses, but have the ability to focus even closer than super wide-angles.

Nikonos users can combine their 35 mm and 28 mm lenses with close-up kits or extension tubes to change their picture area and reproduction ratios. Likewise, Motor Marine II-EX shooters may attach a 2T or 3T macro lens over the camera's 35 mm lens to increase magnification. Images from 1:6 to 1:1 can be achieved depending on the macro system used. All Nikonos and Motor Marine II-EX macro systems require the use of wire framers to determine shooting distance and area of coverage. Patterns (sea fans and brain coral) and small invertebrates (bristle worms and nudibranchs) fill these framers nicely.

To get close-up portraits of fish, there is no better way than with a housed SLR 60 mm or 105 mm lens (manufacturer focal lengths may vary), or Nikonos RS 50 mm. The greatest advantage of SLR macro photography is that the lenses don't have wire framers to scare away fish. By using flat ports instead of domes when shooting housed SLRs (the front element of an RS 50 mm is flat), the refractive property of water further enhances the magnification. Reproduction ratios of 1:1 and greater can be obtained without touching marine creatures at all. Shooting SLR macro lenses does require more patience and excellent diving skills (especially buoyancy control).

Zoom

With the advent of auto-focus came the ability to use zoom lenses under water. Housed SLR shooters can choose from a variety of zooms including 18-35 mm, 35-70 mm and 28-85 mm, while Nikonos RS users get a 20-35 mm. Zoom lenses used in SLR housings require the addition of a +4 diopter to focus on the virtual image created by the dome port.

The biggest mistake novice shooters make in using a zoom lens is assuming it's the perfect all-in-one tool because its variable focal length will cover medium wide-angle, standard and telephoto photography on the same dive. Although many professional underwater photographers use zooms as their "hunting lens"—a catch-all lens on a previously unexplored dive site—they are not a replacement for job-specific wide-angle and macro lenses.

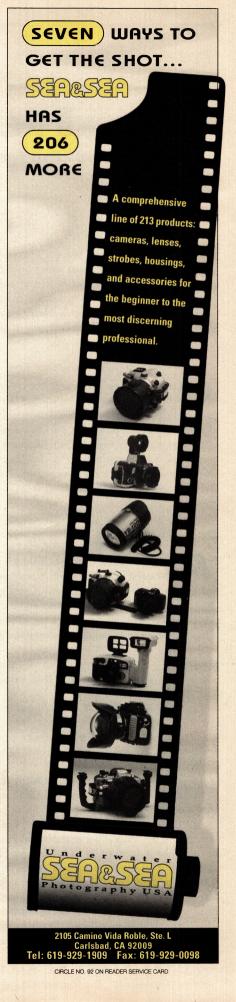
Precautions

While wrecks can provide a bounty of photographic subjects, they are unique diving environments that deserve different safety considerations from normal reef exploration. Sharp metal objects, potentially entangling rigging and visibility-inhibiting silt can turn a simple photo session into an advanced diver's nightmare. However, the greatest hazard a diver may encounter is the curiosity to penetrate the interior of a wreck. If you're not trained to do so, stay on the outside. Besides, the freshest marine life is never found on the inside of a tin can.

The Costs

To achieve their optical extremes, super wide-angles and macro lenses utilize more glass elements than all other wideangles and telephotos. Likewise, fast lenses let in more light, and are easier to focus when using an SLR (housed or Nikonos RS). Exotic optics means more glass and more money. A 35 mm f/1.4 lens may cost twice as much as a 35 mm f/2.8 lens. However, neither lens will produce a sharper image or include more depth of field than the other when set at f/8 or smaller. Because underwater photographs are rarely shot with a wideopen lens aperture, cost versus function becomes a matter of personal preference. However, the key to successful underwater photography remains: use the right tool for the job.

Franklin Viola is an RSD field editor.



Head Cases

How to treat the five most common types of diver headaches.

By Samuel Shelanski, M.D.

My wife and I are real bottom hogs. We always stay within safe limits using both the tables and a dive computer. Nevertheless, after two or three days of intensive resort diving. I suffer from headaches, Somewhere I have seen a reference to carbon dioxide headaches. Can you tell me why I suffer major headaches while engaging in rather intensive diving? PETER G. SMITH

via e-mail

■ I seem to get headaches when I dive deeper than about 80 feet. This started last summer and continued through my recent Cozumel vacation. Aspirin clears up the headache between dives, but it usually returns on the next dive. Can't be mask squeeze, as I'm constantly clearing water from my mask. These aren't blinding, debilitating headaches but are more generalized with some nausea (no vomiting yet). Not very comfortable, any suggestions?

> BILL ANDERSON OTTAWA, ONTARIO

■ Diving can trigger a headache in several different ways: neck and back strain from improperly adjusted or too-heavy gear, dehydration, sun glare, masks that are too tight, aspiration of salt water, and the mental strain of calculating repetitive dive tables. Some of the other diving-related causes deserve more detailed discussion. They are:



Type: Carbon dioxide toxicity headache Symptoms: Dull, throbbing head pain after

Cause: Carbon dioxide buildup in the body due to hypoventilation

Remedy: Breathe properly: slow, deep breaths. Do not skip-breathe to conserve air.

Carbon dioxide headaches are probably the most common type of headaches to afflict divers. They are caused by an increase in the amount of CO₂ in the body. This in turn stimulates special receptors in the blood vessels of the brain, and results in an increase in the blood flow to the brain, causing headaches.

While an increase in CO2 can result from a contaminated tank of air, it most frequently stems from hypoventilation. Hypoventilation occurs when too little air circulates through the lungs to "flush" the system, allowing waste gases to build up. Imagine a long hallway with lots of small rooms off of it. Even if the air in the hall circulates, the air in the rooms can become stagnant. Hypoventilation can be brought about in two ways:



Not taking large enough breaths. This occurs intentionally when a diver mistakenly believes taking smaller breaths will conserve air. There can also be some mechanical limitation, such as a tight wetsuit or jacket-style BC, that prevents the diver from fully expanding his lungs. In either case, there will be areas of the lung where there is no gas exchange with each breath, and where high levels of CO₂ from the blood will accumulate.

Not breathing often enough. This is also usually done consciously in order to conserve air. In this case, there is air circulating through the alveoli, or "rooms," where gas exchange occurs. But the abnormal time between breaths allows CO2 buildup with an associated rise in blood levels.

Carbon dioxide headaches are characteristically throbbing in nature, and do not respond to analgesics or migraine medications. The most effective preventive measure is to make sure you're taking slow, deep breaths. This will help reduce the buildup of carbon dioxide and help you relax as well, leading to reduced air consumption.



Type: Tension headache Symptoms: Pain in the back of neck and head Cause: Muscular tension Remedy: Experience, diving within your capabilities

Particularly in newer divers, or in divers encountering new diving conditions, anxiety can lead to a tension headache. These headaches are due to muscular stress, usually in the neck and back of the head, but also can result from a clenched jaw. Divers generally stop getting these headaches as they become more comfortable in their diving environment and learn to relax.



Type: Sinus headache **Symptoms:** Forehead or face pain on ascent or descent

Cause: Inability to equalize pressure in the sinuses **Remedy:** Long-acting

decongestants, slower descents and ascents

On ascent or descent, changes in pressure can cause pain in the sinuses, which can be interpreted as a headache when there is some problem with equalizing. Most commonly, this affects the frontal sinuses on descent, and is felt as pain across the forehead and will frequently improve on ascent.

Contributing factors include inflammation in the nose and sinuses, often caused by allergies or a cold. For this reason, you shouldn't dive while sick. If you have allergies, you should discuss with your doctor which medications will help you, while avoiding drugs that may be sedating.



Type: Migraine headache Symptoms: Severe headaches with nausea Cause: Various causes Remedy: Avoiding whatever triggers the headache

In general, people who suffer severe migraines really shouldn't dive. Any of the factors associated with diving that contribute to headaches can precipitate a migraine. A diver who gets a severe migraine headache while diving is at increased risk of accident or injury from the effects of the headache—which include an inability to think clearly, psychological stress, vertigo and vomiting.

Some migraine sufferers can dive safely if they are able to identify a specific stres-

sor, such as cold, that causes their attacks, and taking the necessary measures to avoid that trigger. Migraine sufferers must be very careful about any medications that they take while diving. Many drugs used to treat migraines contain codeine or barbiturates which are sedating and increase the risk of nitrogen narcosis.



Type: DCS headache
Symptoms: Headache
with neurological deficit
Cause: Type II DCS,
arterial gas embolism
Remedy: Hyperbaric
oxygen therapy

If your dive buddy starts to complain of a headache after diving and reports other symptoms of decompression sickness—including pain in a joint or limb, itching, skin rash, localized swelling, nausea or vomiting, dizziness, ringing in the ears and extreme exhaustion—don't review the list of possible causes of headaches. Get to the nearest phone and call DAN (919-684-8111). A headache, along with neurological deficit, can be symptomatic of arterial gas embolism or Type II decompression sickness. Even if it (Continued on page 93)





Ocean Corporation

LEADING-EDGE TRAINING FOR YOUR COMMERCIAL DIVING CAREER





he Ocean Corporation (TOC) is among the largest commercial diver training organizations in the world. Says CEO Les Joiner, "We provide the commercial diving industry with about one-third of all entry-level divers. The companies know we have a practical and realistic hands-on training program. And we are in Houston, the commercial diving, offshore construction and oil industry capital of the world."

The Ocean Corporation consistently graduates commercial divers who are in step with industry needs. The staff continues to work in commercial diving, which means training is up-to-date.

Over the past 27 years, the TOC philosophy has been to provide career training that ensures year-round employment and success for each graduate. "We make the student's future our first priority," Joiner says.

TOC graduates may be required to work anywhere there is water. Divers do everything from golf ball recovery to oilfield work, to heavy construction on dams, bridges and in harbors. Any well-rounded education should include training in every type of equipment and conditions, says Joiner. "Diving is an exciting field where you are rated for your ability. The more you know and can do, the high-

er and faster you go. Our training offers our graduates several career paths."

At the Ocean Corporation, the equipment is as diverse as the curriculum. In addition to open-water training, TOC students receive instruction in six elaborate tanks. Windows and communication systems allow feedback from instructors outside. "The tanks are a positive factor," says Joiner. "We can observe trainees and correct bad diving or work patterns before they become habits."

Underwater welding and cutting are taught in two tanks; rigging to lift heavy weights in another. TOC emphasizes oil industry training. Installed in a major tank are life-sized replicas of offshore oil riser sections, pipe repair clamps and rigging projects. Students learn how to make pipeline penetration dives and to work in confined spaces.

Commercial Diver Training (CDT) is the cornerstone at TOC. It is the main, full-time course for commercial diver certification. The diving program includes advanced scuba, commercial air and mixed-gas. It also teaches skills in topside and underwater welding and cutting, and diving in nuclear and contaminated water and from lockout bells. The course includes the Offshore Safety and Survival Seminar. Graduates have this

required certification before they start with an employer. CDT graduates are qualified and certified to go directly to work in any area of the commercial inland and offshore oil industry. "We have the least expensive complete diver training course," Joiner adds.

After the industry began experiencing a shortage of certified NDT specialists, TOC instituted Non-Destructive Testing Diver Training. This elective course runs concurrently with CDT. NDT certification usually provides an opportunity for faster breakout as a diver.

Diver Medical Technician Training is an elective that can follow any approved commercial diver training program. The course teaches students to handle a variety of critical offshore accidents—diving and non-diving.

Perhaps the most special aspect is job placement assistance. Over the past eight years, TOC has consistently located more job openings than they have graduates.

For details on programs and financial aid, contact The Ocean Corporation. Phone (800) 321-0298 or (713) 530-0202. World Wide Web: http://diveweb.com/toc

—Text by Rob Curran

UNEXSO and Lucayan Beach Resort DIVE ADVENTURE, BAHAMAS LUXURY AND CONVENIENCE

accommodations and topside fun on your next vacation? You can hit the jackpot at UNEXSO and Lucayan Beach Resort and Casino on Grand Bahama.

In 1965 founders established the Underwater Explorers' Society as a place where divers can join in underwater exploration. The same vision drives UNEXSO today as it celebrates 30 years of diving adventure. Today, scuba adventure is guaranteed at UNEXSO. It is the destination for shipwrecks, reef diving and shark and dolphin encounters.

ADVENTURE AND
TRAINING—A UNEXSO
SPECIALTY ➤ In the 1996
Rodale's Scuba Diving Readers'
Choice Awards, Grand Bahama
was ranked second in the

Caribbean for big animal encounters. In the world-famous dolphin dive, divers interact in the open ocean with friendly bottlenose dolphins. UNEXSO's "Shark Junction" dive is second to none. Sharks are presented "up close and personal" to participating divers, affording magnificent photographic opportunities. A magnificent wreck dive, Theo's Wreck is a 230' steel freighter that was sunk on the "Edge of the Ledge."

UNEXSO has earned its reputation for convenient diving. The complex features well-stocked retail and photo/video centers, classroom, docks, training pools, photo labs, a fleet of 8 dive boats, and even a recompression chamber. Affiliated with PADI, NAUI and SSI, UNEXSO offers resort courses, training from open-water to Divemaster, specialty courses and checkouts, as well as referrals for certifications.



UNEXSO is your one-stop shop for reef, shark, dolphin and shipwreck diving (above).

The Lucayan Beach Resort & Casino is the perfect vacation destination offering great diving, luxury accommodations and family fun (below).



THE LUCAYAN: LUXURY, COMFORT AND CONVENIENCE ➤ The Lucayan Beach Resort and Casino sits in tropical splendor on a private peninsula. A spotless white-sand beach stretches for more than a mile.

The resort is the ideal vacation destination, offering something for every member of the family. The activities team serves up an impressive menu of complimentary fun, including lessons in casino gaming, Bahamian dance lessons, games and friendly competitions on the beach, ping-pong and shuffleboard tournaments, bingo and volleyball. Activities for youngsters include Mini Olympics, seashell hunts and swimming races in the pool.

The Lucayan Beach Resort features a 20,000 square-foot full service casino offering all table games and slot machines, the Flamingo Showcase Theatre, several inside bars, an Olympic-size freshwater swimming pool with Snack Shack, four tennis courts, watersports center and three nearby championship rated 18-hole golf courses. Four restaurants offer dining for every mood, taste and budget.

Air-conditioned guest rooms are decorated in attractive soft tropical colors. Furnishings, amenities and lots of space make each room a comfortable home-away-fromhome. Other extras include luxurious marble bathrooms, color cable TV, radio, direct-dial phones and personal Interlock safes for valuables.

The UNEXSO-Lucayan combination offers the ultimate in vacation convenience. Enjoy a week of diving, luxury accommodations and family fun without a thought to rental

cars, buses or taxis. Within walking distance is the Port Lucaya Market-place, a unique marina with lively bandstand entertainment, straw market, and 75 boutiques and restaurants.

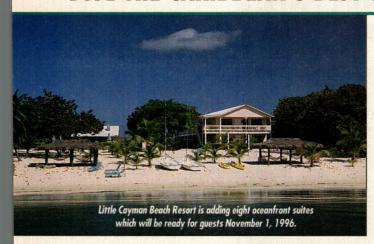
BOOK IT ➤ Packages with UNEXSO and Lucayan Beach Resort start at \$214 per person/double occupancy for two nights and three dives. A five-night/nine-dive package is \$510. Packages feature bayview room, daily breakfast at the UNEXSO Brass Helmet restaurant, and tanks and weight belts.

Children under 12 room free with parents, excluding taxes and breakfast.

Contact UNEXSO at (800) 992-DIVE (3483) or (305) 351-9889 for details and lowest-cost flights.

—Text and photography by Rob Curran

Little Cayman Beach Resort DIVE THE CARIBBEAN'S BEST WALLS



o brag, just fact. Little Cayman Beach Resort has the most modern and complete facilities of any dive resort on Little Cayman. But with only 32 air-conditioned rooms—all with a pool or ocean view, this is not the place to get lost in a crowd. You're far more apt to find yourself zoned out among the brightly colored sponges and unbelievably healthy corals on one of the shallow walls that begin in just 18 to 20 feet of water.

Little Cayman Beach Resort dives these walls—the Caribbean's best—three times daily. With two 42-foot New-

ton custom dive boats and a jet boat, divers have a choice of locations, an important option for veteran divers already familiar with the sites between Joy's Joy and Cascades, the most regularly visited section.

Right around the corner is famed Bloody Bay Wall. Because of the wall's proximity, and because lots of divers want to explore it after dark, night dives are scheduled three times a week. Nighttime is also the best time to see Molly, a friendly manta ray with an impressive eight-foot wingspan.

Diving night and day in this underwater Garden of Eden could wear out a person ... just the kind of relaxing vacation serious divers look forward to.

BOOK IT ➤ A three-night dive package without meals is \$380 pp/dbl occ, while a seven-night stay with diving and all meals is \$1,383 pp/dbl occ. For information or reservations, call toll-free (800) 327-3835 or fax (813) 323-8827.

RESORT PROFILE

Brac Reef Beach Resort NEW DIVE SHOP, NEW BOATS — NEW LOOK!

rac Reef Beach Resort on Cayman Brac just gets better and better. The resort recently completed a \$1.8 million renovation of its 40 spacious air-conditioned rooms, built a brand new dive shop called Reef Divers and added a pair of 42-foot Newton custom dive boats plus a jet boat.

Besides being an internationally known dedicated dive resort, Brac Reef is also a true beach resort. Palm-shaded hammocks border the huge private beach, seemingly as long and wide as a football field.

FOOD, GLORIOUS FOOD!

Diving works up a healthy appetite and Brac Reef satisfies even the heartiest eater with three buffets daily that feature at least two hot entrees accompanied by fresh fruits, salads, deli meats, cheeses or desserts, depending on the meal. Diners can eat inside the air-conditioned restaurant or on the patio adjacent to it.

WALLS AND MORE

Reef Divers, Brac Reef's new dive shop, features a full underwater photo and video center. The two morning dives typically begin at one of the island's many incredible wall sites, which are every bit as colorful and rich as at neighboring Little Cay-

man. Weather permitting, full-day trips are made several times weekly to Little Cayman, with a buffet lunch provided at a sister property, Little Cayman Beach Resort.

Although Brac Reef's facilities may have changed, its casual, friendly atmosphere remains the same. Some things just can't be improved on.



BOOK IT ➤ Three-night dive packages without meals start as low as \$303 per person, double occupancy. Seven-night dive packages including all meals begin at \$969 per person, double occupancy. For information or reservations, call (800) 327-3835 or fax (813) 323-8827.

Allegro Resorts & Dive Palancar TEAMING UP IN MEXICO'S YUCATAN

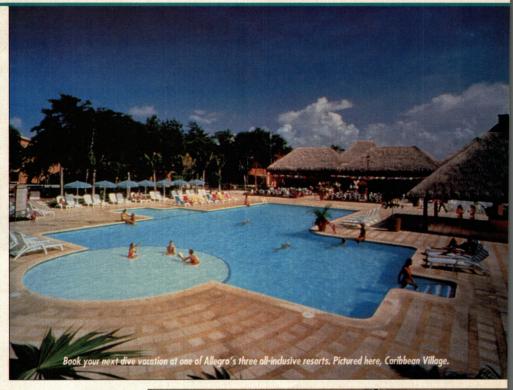
s soon as you set foot on either of Allegro's Playa Del Carmen all-inclusive resorts, you'll realize you picked the perfect place for a an exciting, yet hassle-free dive vacation.

The Diamond PlayaCar is very similar to its sister resort across the channel in Cozumel. The dive traveler will receive the same excellent food, beverages, activities, comfortable rooms and friendly service. The only noticeable difference is the abundance of tropical flora. Both the Diamond and Caribbean Village were literally cut out of the dense Yucatan jungle, with much of the area's natural beauty preserved.

Both resorts are located approximately one mile south of Playa del Carmen's town center and Cozumel ferry terminal. The Diamond is situated on arguably the most beautiful stretch of beach in all of Mexico. The Caribbean Village is nestled into the jungle surrounded by a world-class championship golf course, and has a full-service beach club with everything from a great restaurant to a fully equipped watersports facility. Sports-minded guests at the Caribbean Village enjoy free greens fees, providing a cost effective surface interval between morning and afternoon dives.

For those familiar with Diamond Cozumel, you'll be glad to see the Dive Palancar logo on new dive boats at both PlayaCar properties. Dive Palancar offers a wide variety of diving and snorkeling options.

The Yucatan mainland from Playa del Carmen south to Tulum offers sport divers some of the most beautiful reef systems in the Caribbean. Dive Palancar operates daily morning and afternoon boat dives from their beach location at the Diamond PlayaCar. And just when you think the water conditions couldn't possibly improve, Dive Palancar will take you back into the jungle for the ultimate freshwater rinse. Daily Cenote excursions are offered for both scuba and snorkeling at a variety of



sites. Last but not least. no Yucatan dive trip would be complete without a look at Cozumel's legendary walls. Dive Palancar offers Cozumel day diving that includes transportation to and from the island and two one-tank wall or reef dives. Diamond and Caribbean Village guests also receive full access to the Cozumel resort and full use of all facilities, including restaurants and bars.



BOOK IT ➤ Packages for any of these three properties, or combinations of hotels and services, can be booked through Dive Tours at (800) 433-0885. Mention Rodale's Scuba Diving when you call and receive a free FreeStyle watch with every package over \$500.

Dive Tours offers the industry's best selection of proven dive resorts and operators along with guaranteed lowest wholesale air prices. Dive Tours, 12200 Northwest Fwy., Suite 519, Houston, TX 77092. Fax (713) 680-2306. E-mail: divetours @aol.com.

Great Abaco Beach Resort JEAN-MICHEL COUSTEAU'S OUT ISLANDS SNORKELING ADVENTURE

ith thousands of miles of reefs, more than 700 islands and 100,000 square miles of ocean, the Bahamas are truly the "Snorkeling Capital of the World." What better place to introduce family or friends to the subsurface wonders of the Caribbean?

Great Abaco Beach Resort recently introduced the Jean-Michel Cousteau's Out Islands Snorkeling Adventures. This innovative program is appealing to everyone—families, honeymooners, singles, couples, children and seniors alike.

The instructor and guide for the Snorkeling Adventure is none other than Skeet LaChance, a beloved legend in the Out Islands. Skeet is known for his gentle hands-on interaction and communication with marine life. Groupers and eels greet him like old friends.

LaChance guides students through

three hours of snorkeling instruction and three guided trips to shallows reefs in the Abacos. The Adventure features a special course and video, Paul Humann's snorkeling guide and waterproof fish I.D. cards, photographer Mike Lawrence's slide presentation on snorkeling the local reefs, certificate and T-shirt. As a bonus, you'll receive a set of new gear: U.S. Divers mask, fins, snorkel and gear bag.

Great Abaco Beach Resort is a premier vacation destination. Located on 52 beautifully landscaped acres, it features 80 air-conditioned rooms, six private villas and Boat Harbour Marina. Deluxe rooms come

complete with all the modern conveniences: coffee makers, personal hair dryers, private patios, 24-hour telephones and satellite TV. Exotic West Indian furnishings add authentic Out Island flavor to this exclusive resort.

BOOK IT ➤ The Out Islands Snorkeling Adventure is \$240. Divers can accompany family and friends on their Snorkeling Adventure, or the resort can

arrange scuba trips. Contact Great Abaco Beach Resort. Phone (800) 468-4799 or (809) 367-2158. Fax (809) 367-2819.

—Text by Rob Curran

LIVE-ABOARD PROFILE

The Sipadan Princess EXPLORING THE WONDERS OF SIPADAN, LAYANG & BEYOND

ituated nearly halfway around the globe from the United States, Sipadan remains a mystery to all but the most adventurous divers; those willing to trade in a little extra travel time for phenomenal diving. When Sipadan was discovered by divers early this decade, tales of its treasures spread like wildfire. As Sipadan became more popular, travel became easier and the options for getting there increased, especially with the addition of live-aboard dive boats. Live-aboards offer unlimited access to the sites that have made Sipadan famous, as well as more remote areas with equal or superior diving.

One of the most luxurious liveaboards is the 134-foot Sipadan Princess. This spacious vessel is fully outfitted for diving and staffed with a knowledgeable crew that knows the reefs and local waters. Accommodations range from private twin cabins to three-berth shared quarters; all are furnished with air-conditioning and en suite facilities. Weekly charters depart from Layang Layang and venture to reefs around Sabah including the Layang Layang Atoll,

Sipadan, Ardasier Bank and other magical spots in the South China Sea.

Sipadan is best known for its gorgeous reefs, extraordinary fish life and bountiful turtle population. The reefs, considered to be among the richest in the world, are a tangled web of colorful life. Dramatic drop-offs draped with velvety sea fans and lacy soft corals attract sharks, tuna, jacks, shimmering curtains of toothy barracudas, manta rays, dolphins and, occasionally, whale sharks and schooling hammerheads.



BOOK IT ➤ For a guaranteed hasslefree trip, let Poseidon Ventures plan your Sipadan Princess Adventure. Poseidon Ventures can arrange airfare from the States, accommodations on land before or after your charter, river trips into Borneo's interior, and tours of the famous Orangutan Preserve in Sepilok where young orangutans run free in a virgin rain forest. To plan your Malaysian vacation today, call Poseidon Ventures Tours at (800) 854-9334 or contact them via e-mail at Poseidon@Calypso.com.

Dive Abaco: EXPLORE THE ABACOS, THE BAHAMAS' TREASURE ISLANDS

t the "top of the Bahamas" is a boomerang-shaped cluster of islands and cays called the Abacos. Sailors have long hailed the 130-mile-long archipelago as one of the finest cruising areas in the world. But the Abacos' reefs and crystal-blue waters are also a vast, rich and pristine playground for scuba divers and snorkelers.

Whether you arrive by sea or air in the quaint Out Island town of Marsh Harbour, Dive Abaco! is waiting to show off the Bahamas' underwater treasures. This full-service dive center has been showcasing the world's third-longest barrier reef since 1978. Sites to explore include mountainous coral formations, tunnels, caverns and reefs, both shallow and deep—all within 30 minutes from the dock in

Dive Abaco's spacious custom boat.

Dive Abaco! specializes in friendly, professional service and daily, personally guided two-tank scuba tours and snorkeling trips. Name your desire, and Dive Abaco! can take care of it: Night dives. NAUI, PADI and CMAS certification courses. Open-water checkouts (referrals). Introductory (resort) courses. Underwater videos of your dives. Complete dive equipment rentals, including underwater cameras.

BOOK IT ► Great Abaco Island features some of the finest Out Island resorts in the Caribbean. Package prices start at \$350 for five days/four nights accommodations and three days of diving. For details and reservations, phone Dive Abaco! at (800) 247-5338. In the Bahamas, call (809) 367-2787

or fax (809) 367-4779. Internet: http://www.internetfl.com/abaco.html

—Text by Rob Curran



DIVE OPERATOR PROFILE

Atlantis Reef Divers SHARKS, SHIPS, SUBS AND TURTLES ON OAHU

hen it comes to diversity, accessibility and sheer diving excitement, no other Hawaiian island can compete with Oahu, where fish-filled reefs and a coralencrusted wreck lie just minutes away from the island's bustling core.

The Atlantis Wreck, the 174-foot retired Navy oiler YO-257, is number one on Oahu's underwater hit parade. The ship was intentionally placed off Oahu's coast in 1989 by Atlantis Reef Divers and its parent company, Atlantis Submarines. It wasn't long before local fish and critters moved in and the Atlantis Wreck was one of Oahu's hottest attractions.

In the recesses of the wreck, luminescent blue-striped snappers swarm while crabs, lobster and toothy eels creep and slither in the wreck's pipes and corners. Oahu's larger inhabitants: sharks, manta rays and the Atlantis Submarine inhabit the surrounding sapphire water. Dives are ingeniously coordinated with submarine tours so sub-riders and divers meet eye-to-eye under water.

Atlantis Reef Divers has been monitoring the wreck's progress since the day it entered the water; they know every critter, crack and crevice. Daily two-tank charters are offered aboard the luxurious 75-foot Rainbow I. Professional custom videos created during the charter are available just minutes after the boat returns to Port Hilton. Turtles are usually the main attraction on the second dives. Mid-morning to early afternoon you can enjoy the Club Atlantis adventure which includes scuba diving, snorkeling, jet-skiing and a island-style buffet lunch.

Clear, warm water and abundant marine life make Oahu great for both novice



and experienced divers. Atlantis Reef Divers can also arrange trips to the *Mahi* wreck and the reefs on the west side of the island.

BOOK IT ► Let Atlantis Reef Divers help you plan the perfect Hawaiian vacation; rental car and hotel packages are available. To book your Oahu dive vacation, call (800) 554-6267.



Simply tear out the reply card, circle the numbers preceding the names of the companies which interest you, fill out your name and address, affix postage, and drop it in the mailbox. You'll soon be receiving information which will help make your diving more enjoyable!

DIVE DESTINATIONS		CAYMAN ISLANDS		UNITED STATES VIRGIN ISLANDS	
AUSTRALIA		38. COCONUT HARBOUR 1-800-552-6281 39. DIVI RESORTS 1-800-367-3484 40. LITTLE CAYMAN BEACH RESORT	See ad pg. 79 See ad pg. 25	68. ANCHOR DIVE CENTER I-800-532-DIVE 69. DIVE EXPERIENCE I-800-234-9047 70. VI DIVERS I-800-524-0410	See ad pg. 34 See ad pg. 64 See ad pg. 68
I. DIVE DISCOVERY/REEF EXPLORER 1-800-886-7321	See ad pg. 95	1-800-327-3835 41.TREASURE ISLAND DIVERS	See ad pg. 23	DIVE EDUCATION & INSTRU	
BAHAMAS		1800-872-7552	See ad pg. 69	71. D.A.N. I-800-446-2671	See ad pg. 26
2. BAHAMAS MINISTRY OF TOURISM		COZUMEL		72. FLORIDA DIVING INSTITUTE 1-800-282-3328	See ad pg. 96
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1-800-688-4752 4. DIVE ABACO 1-800-247-5338 5. SMALL HOPE BAY LODGE	See ad pg. 24 See ad pg. 94	1-800-346-6116 44. ISLAND DREAMS TRAVEL 1-800-346-611	See ad pg. 65 6 See ad pg. 65	DIVE EQUIPMENT	and the
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DIVE MEDICINE

(Continued from page 85)

turns out that the headache is not divingrelated, anyone with these symptoms should seek medical care immediately.

The Diagnosis

To answer Mr. Ellermeier's and Mr. Anderson's questions, it is always difficult to make a diagnosis based upon a brief description. There are so many questions that I would like to ask. For example, where is the headache localized? Do you have a history of headaches?

However, Mr. Ellermeier, since your headaches come on after two or three days of diving, I suspect that they are most likely due to the cumulative effects of fatigue and muscle strain that build up over the days. I suggest that you make sure that you are as fit as possible for diving, and if this does not help, then try taking a break with a nondiving day in the middle of your dive trips.

Mr. Anderson, your situation is a little different. The fact that your headaches come on at a certain depth is unusual. The accompanying nausea is suggestive of a migraine, but this isn't definitive. Is it possible that you're anxious about diving beyond these depths, and that this is manifesting itself as a tension-related headache? I know several divers who dislike diving beyond depths from which they feel they could make a free ascent if necessary. The anticipation of getting another headache could be enough to result in a self-fulfilling prophecy.

Finally, common things frequently present themselves in uncommon ways. Eighty to 90 feet may be the depth at which the ambient pressure, combined with your breathing pattern, results in an elevated carbon dioxide level. It would be odd for this to happen on every dive, but it could happen.

Try to relax, and make sure that you are taking deep breaths when you dive. If this still doesn't help, then you may be one of those divers who gets headaches that we can't explain.

Even if you could eliminate all the possible causes listed, some divers are still going to get headaches. A certain number of these may have absolutely nothing to do with diving, while some undoubtedly do. As we learn more about the effects of diving on the body, we may be able to add more causes of headaches to the above list, as well as ways to avoid them.

Questions for Dr. Shelanski should be addressed to RSD, Dive Medicine, 6600 Abercorn St., Suite 208, Savannah, GA 31405; e-mail RSDmgzn@aol.com.

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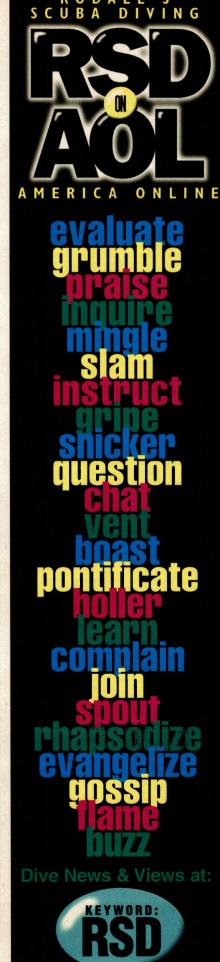
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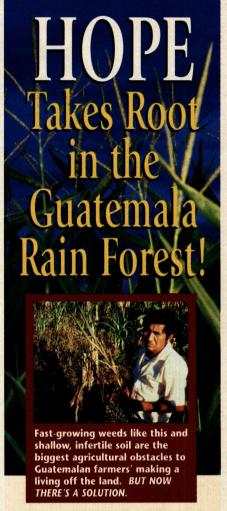
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MARCH 1997
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COPY AND PAYMENT IS
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BAY ISLANDS

(Continued from page 41)

Dive Resorts

Despite the infrastructure, Utila has only recently come into its own as a major Caribbean dive destination. While there is a plethora of motels that appeal to Europeans on budgets, only three appeal to the modern and discriminating American dive traveler. Family-style Utila Lodge in the heart of town is the quintessential dive resort where the daily schedule is simple: eat breakfast, dive, eat lunch, dive, eat dinner, night dive, sleep. Far from the noise and energy of town lie two resorts, Laguna Beach Resort and Utila Reef Resort, both a 15-minute boat ride to the west. Laguna Beach is brandnew, and caters to the diver and fisherman. There are a handful of private docks to take in a little fishing on the lagoon in the morning or to read a book on in the evening after diving. Nearby is somewhat smaller Utila Reef, where the only noises are the crashing of waves onshore.

Diversions

Explore the town's winding walkways on foot or rent a mountain bike for \$3 a day and pedal three miles on a dirt road to Pumpkin Hill Beach on the north shore. Joggers and bikers appreciate Utila's flat terrain, and the main concrete thoroughfare provides an excellent running surface.

CAYOS COCHINOS

Cochino Grande and Cochino Pequeño are Pablo and Pedro, the Bay Islands' country cousins. Despite being the closest to the mainland, the Hog Islands are the least visited, most culturally remote and pristine of the Bay Islands. Military-trained rangers patrol the 280-square-mile marine park, and Smithsonian Institution-sponsored marine biologists conduct research here in this showpiece of Honduran environmental protection.

The Central American mainland to the south looms like a giant jagged fence, providing an excellent backdrop for these beautifully peaked islands. Bring a book or writing journal here, as the lack of roads, cities and modern inconveniences gives you plenty of time to plot and ponder. If you don't want to be bothered by the outside world, look no further.

Diving

Diving in the Cayos is varied, from reefs

of juvenile tropicals just a couple of finkicks offshore to Roatan Banks, a dozen seamounts that rise from 200 feet to 35 and bring in the bigger critters—jacks, spadefish, sharks.

The best-enforced marine park in the Bay Islands has paid off with some of its best diving. The park embraces all the seas from dry land to five miles out; and all the typical rules apply: no anchoring, collecting, fishing, spearfishing or waste discharge. The biological reserve administration can provide more insights into park laws (504-52-2090).

Dive Sites

You'll kick yourself if you don't bring your macro kit to the Hog Islands. The Gardens, a five-minute boat ride away on Plantation Beach Resort's Pro 42 dive boat, looks just like it sounds: terraces and chimneys covered in profuse marine life from just below the surface to 130 feet down; life growing from and on top of life. Here, Paul Humann's creature ID book is as important as your dive log and daily journal. Pelican Wall, from 15 to 130 feet, just may be the Bay Islands' best; a terraced wall shot through with caves and grottoes that makes a don'tmiss night dive. Chances are you'll see more fish here than on any other dive, including jacks, grouper and the occasional spotted eagle ray.

▶ Dive Resort

Your choice of accommodations and dive operations is simple: Plantation Beach Resort. That's it. In the off-season, you just might have the whole place to yourself. No phones, no lights, no cattle boats. Just good lodging, food and an intimate atmosphere unrivaled in the islands. Live-aboards call here, and dive operations from Roatan and Utila occasionally make the 30-odd-mile voyage when seas are flat. The closing of the airstrip on Cochino Pequeño ensures peace and quiet, but also means you'll have to wait for Plantation's boat to pick you up in La Ceiba for the hour-long trip to the islands.

▶ Diversions

What to do when you're not diving? How about snorkeling, snoozing in a hammock by day or stargazing at night? If you have some energy to spare, take one of the resort's kayaks and a camera to Cochino Grande's only village, which consists of thatched huts, barking dogs, excellent photo opportunities and kids who will climb the trees just to pick a coconut for you.

Nick Lucey is an RSD associate editor.

FAR HORIZON

An RSD Contest

Where in the dive world are you?



ust over 7,000 miles from Utah's Great Salt Lake, you are standing at the edge of a saltwater pool inhabited by a breed of creatures more unusual and more harmless than a Sunday-school class of skinny-dipping Mormons.

You are on an island in an archipelago that is one of the newest independent nations on earth. In a destination renowned for its world-class ocean diving, you're standing at the edge of a world-famous inland site.

According to local creation myth, you're on one of the various body parts of a giant named Uab who ate so much and grew so fat that only his head would fit in his house. One night while he slept, his neighbors set his house afire and he struggled so fiercely that his body broke into hundreds of pieces to form these islands. Perhaps you're looking at a puddle of Uab's salty tears.

Where in the dive world are you?

To enter, identify the country and dive site. Write your answers on a postcard with your name, address and telephone number, and send it to: "Where in the Dive World Contest," RSD, 6600 Abercorn St., Suite 208, Savannah, GA 31405. Correct answers will be entered in a Grand Prize drawing to be held in December 1996. The winner will receive a dive vacation for two to one of the destinations featured in the contest.

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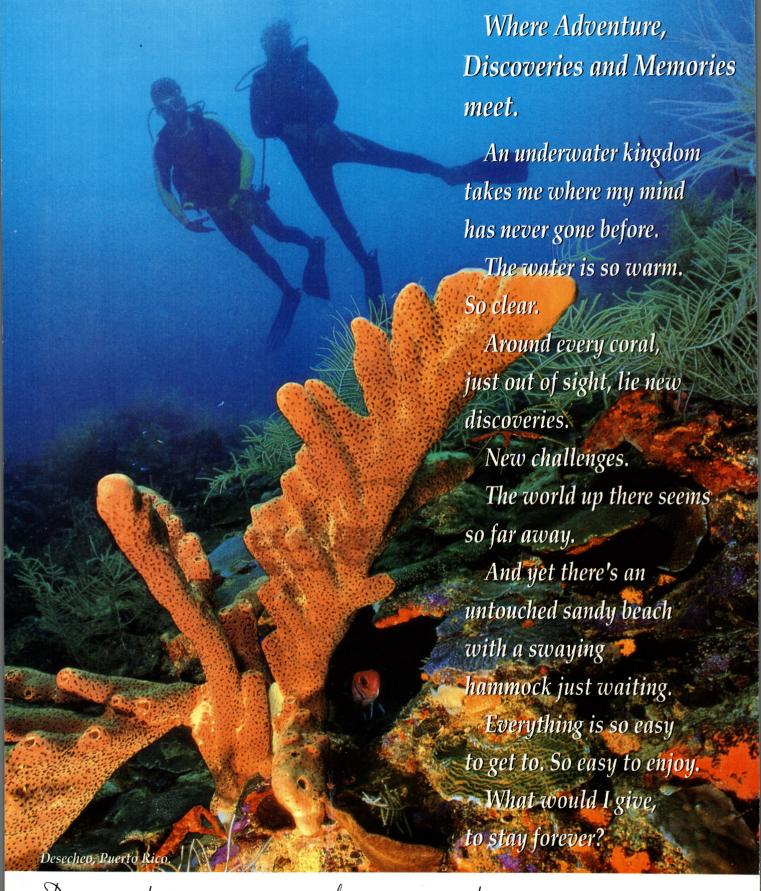


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